

Berkshire Insulation Co.

HOW TO SELECT

Windows

FOR THE HOME



*A Guide by
Window Specialists*



Fenestra

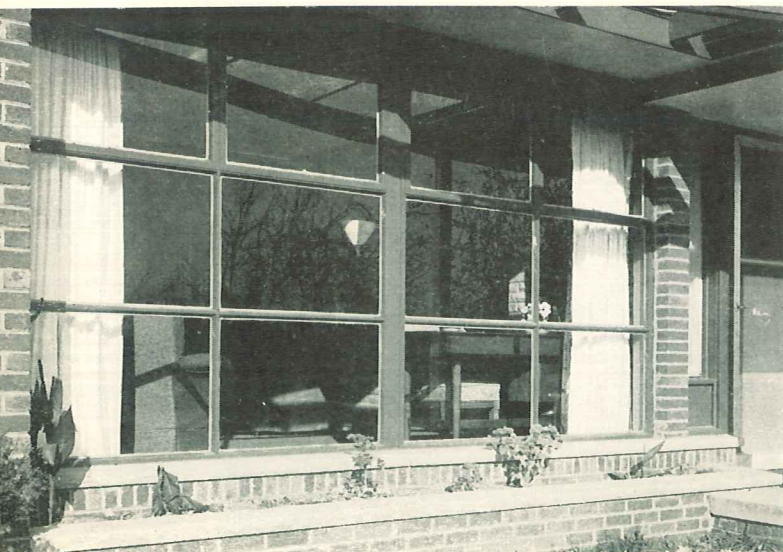
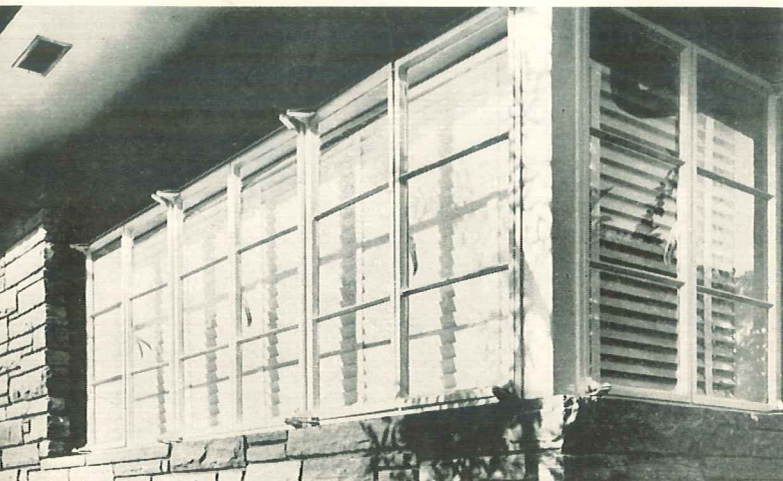
STEEL WINDOWS

1 9 5 5

For Guidance in Your Selection of Windows

A STUDY BY *Fenestra* . . .

AMERICA'S NOTED WINDOW SPECIALISTS



To quickly show the reader how and why to select the windows for a new home *wisely*, this study uses many pictures.

Some pictures show how the right windows will flatter a house, adding distinction to its appearance, both from the inside and from the outside. Other pictures demonstrate that *appearance* is only one of the five basic window needs.

This study may be considered authoritative, because it comes from Window Specialists. Window Specialists know most about windows. Here is presented some of the knowledge of one of America's leading groups—the *Fenestra* Window Specialists. In the construction industry, the building professionals—architects, engineers, general contractors, house builders, lumber and building supply dealers—know *Fenestra* well. For *Fenestra* has supplied (and continues to supply) them with millions upon millions of high-quality windows of many kinds.

JUST WHAT IS A WINDOW?

Window has been described as a “mechanical fixture” dimensioned to fill an opening in a wall. “Mechanical” implies operating efficiency, for to serve the homeowner properly this fixture must be easily unlocked, opened, closed and locked, times without number. Often screens, storm sash, shades and curtains must be attached to it.

WHY “FENESTRA” MEANS “WINDOW” AND SIGNIFIES “WINDOW AUTHORITY”

“*Fenestra*” is the Latin word for “window.”

Fenestra is America's oldest and largest manufacturer of *steel* windows. And while *Fenestra* specializes in steel, it is widely experienced in the manufacture of other window *materials*, including wood and aluminum. *Fenestra* has made many *kinds* of windows, too, including Sliding, Swinging and Projected.

IN THIS BOOK

This publication presents, first, the “Comparison Story”—the three basic kinds of windows, made from the three basic kinds of materials, are examined to show how they meet each of the five basic window needs.

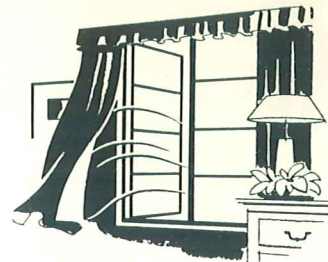
Then follows the “*Fenestra* Story”—the Right Windows, page 9; *Fenestra* Casement Windows, page 10; *Fenestra* Projected (Awning) Windows, page 11; etc.

5 BASIC WINDOW NEEDS

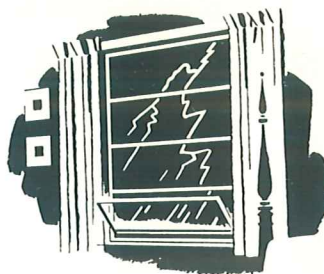


**ATTRACTIVE
APPEARANCE**

FRESH AIR



PROTECTION



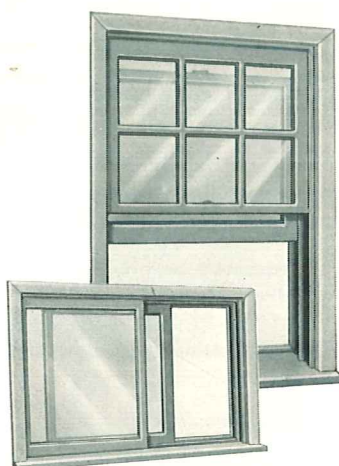
**LIGHT
and VIEW**



**UPKEEP
ECONOMY**

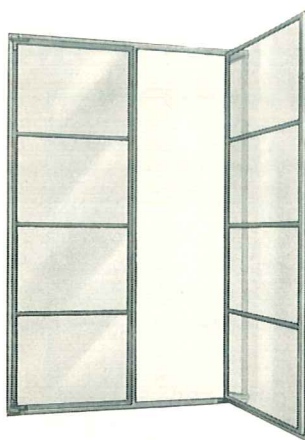


3 BASIC TYPES OF WINDOWS



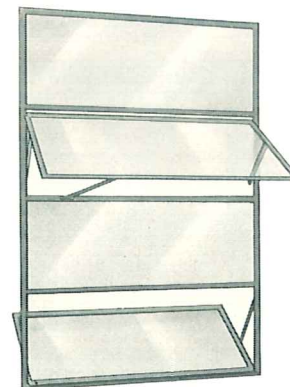
SLIDING TYPE
(VERTICAL OR HORIZONTAL)

Two kinds: vertically sliding (double hung) and horizontally sliding. Sash (ventilators) slide in overlapping planes, parallel to wall. Sash held in open position by balances or friction.



SWINGING TYPE
(CASEMENT)

Vertical ventilators. Hinged right, left or from both sides (double ventilators). Ventilators swing outward, extending beyond plane of wall. Sash held in open position by operating arm at sill.



PROJECTED TYPE
(AWNING)

Horizontal ventilators. Out-projecting ventilator swings out and slides down. In-projecting ventilator swings in and slides up. Each is held in open position by sliding shoes at jambs.

3 BASIC MATERIALS

WOOD

Wood windows are commonly made of pine (which comes in various species) and fir, cedar, spruce and redwood. Hardware and weatherstrips: metal. Protective coating: preservative chemicals.

SOFT METAL

Soft metal windows are usually of aluminum. Hardware: often steel in heavy-wearing parts. Some woven fabric weatherstripping. Protective coatings: special primers, lacquers, anodic treatments.

STRONG STEEL

Hot-rolled bars made of solid steel are used chiefly. Hardware: steel and bronze. Protective coatings: prime paints; Bonderizing and prime paints; Hot-dip Galvanizing and Bonderizing.

ATTRACTIVE APPEARANCE

OF OPEN WINDOWS



SLIDING

One sash overlaps the other in the wood sliding window. Result: an unpleasant clash of window lines.



SWINGING

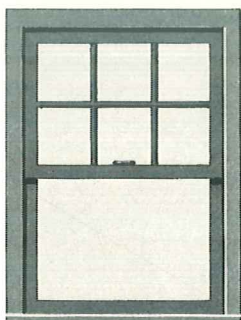
In metal casements, the frame and muntin bars remain in their horizontal planes—no clash of lines.



PROJECTED

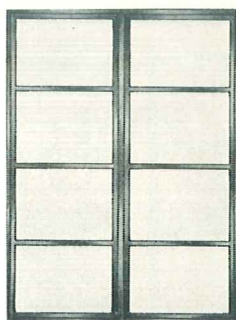
The lines will not cross each other no matter how far a metal projected ventilator is opened.

OF CLOSED WINDOWS



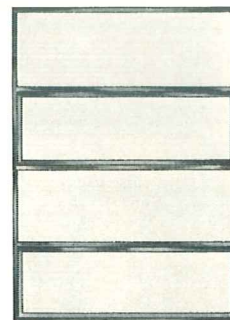
SLIDING

Wide wood window members present a bulky appearance. The closed sash are in different planes.



SWINGING

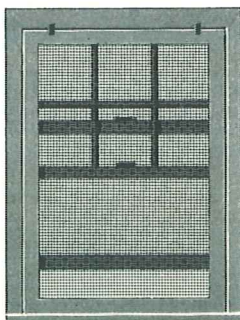
Metal casements present slender lines, beautiful from inside and outside. The vents close in one plane.



PROJECTED

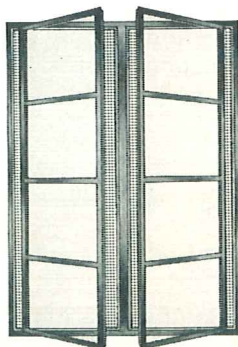
Awning windows put emphasis on attractive horizontal lines. Closed vents are in one plane.

WITH SCREENS



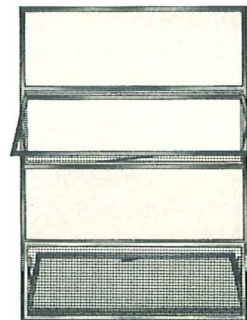
SLIDING

An outside screen frame adds more bulk. The screen hides the window behind a covering of wire mesh.



SWINGING

Inside metal screens are scarcely visible from outside. Narrow frame is inconspicuous from the inside.



PROJECTED

Metal screen for in-tilting vent is outside; frame is small. Projected out vent has inside screen.

DAYLIGHT AND VIEW

LIGHT AREA



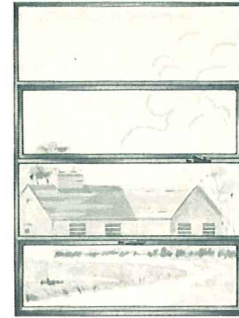
SLIDING

Daylight is blocked by wide wood sash and frame all around opening; also by meeting rail and muntins.



SWINGING

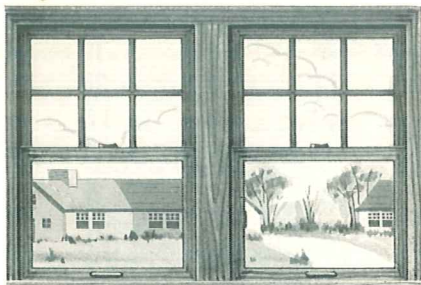
More daylight comes through because the slender metal members allow up to 30 % more glass area.



PROJECTED

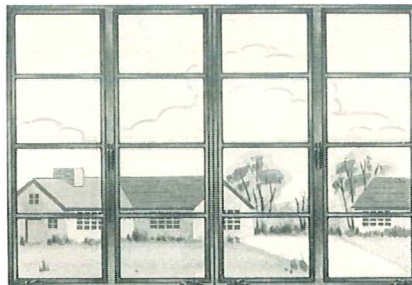
Only a few slim, horizontal lines separate panes of glass. Nearly all the available light is admitted.

CLEAR VIEW



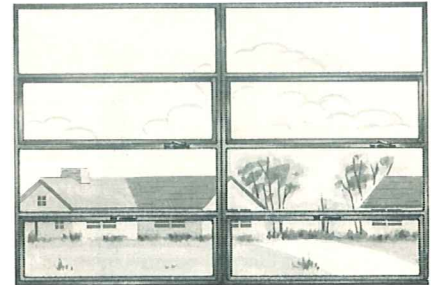
SLIDING

Combining wood windows for a view increases the obstructions (broad mullion, two wide frames).



SWINGING

Combining metal casements with narrow metal mullion gives a wide view and large glass area.



PROJECTED

Combining metal projected windows with narrow metal mullion gives a clear view of the outdoors.

PICTURE WINDOWS



SLIDING

Wood picture window, with flanking double-hung wood windows to provide ventilation, shuts out much of the view because of thick frames and mullions.



SWINGING

Metal picture window, with flanking swinging metal casements for ventilation, offers maximum glass area to take advantage of the full sweep and beauty of the view.

EASE OF OPERATION



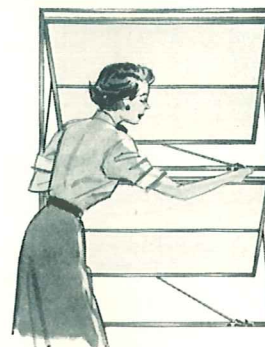
SLIDING

Pull, push, tug, strain and a weather-swollen wood window may not open. Loosen it and it leaks air. Painting glues it shut.



SWINGING

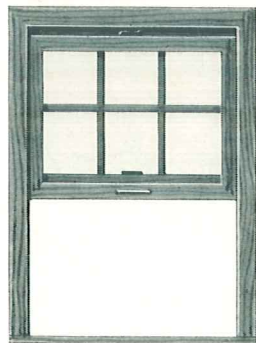
Fingertip turn of the adjuster swings the metal casement open—even over the sink. Vents move freely on bronze-bushed hinges.



PROJECTED

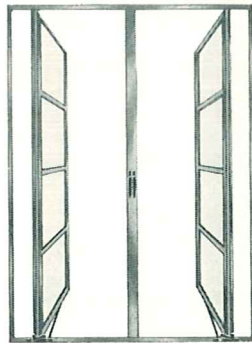
Metal projected ventilators always swing easily. Even when the window is wet or freshly painted, vents open effortlessly.

OPENING AREA



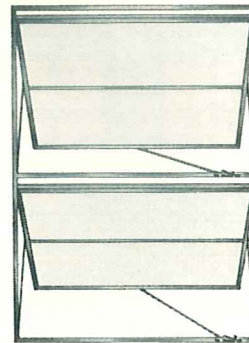
SLIDING

Less than 50 % opening is the maximum with a sliding window, no matter how the sash are arranged.



SWINGING

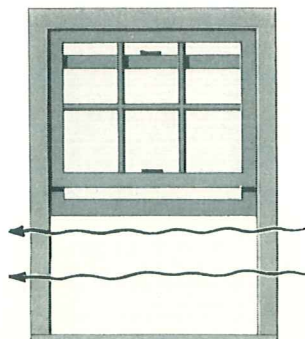
There is 100 % opening with this metal casement window because window's entire area is opened.



PROJECTED

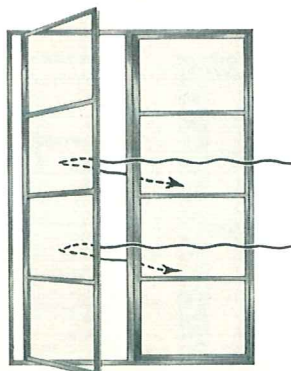
With this metal projected window, 100 % opening is provided by two vents occupying entire opening.

AIR CONTROL



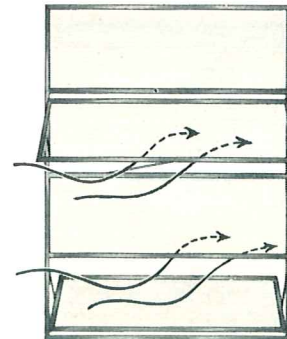
SLIDING

Breezes pass right by vertically and horizontally sliding windows. Ventilation is head-on only, with no control of incoming air or drafts.



SWINGING

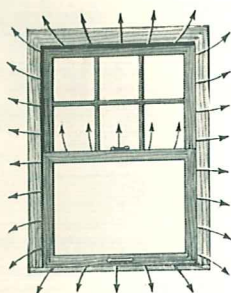
Passing breezes are turned in by "deflector" vents of metal casements. Ventilation from three different directions can be controlled.



PROJECTED

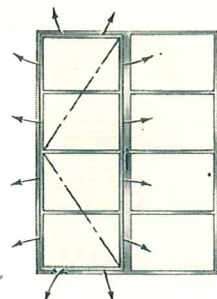
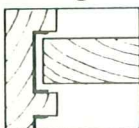
Tilt-out vent admits fresh air while forming a canopy over the opening. Tilt-in sill vent acts as a draft-protecting windguard.

WEATHERTIGHTNESS



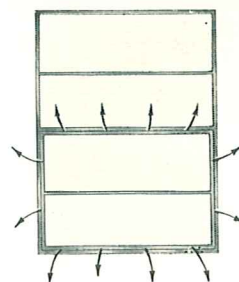
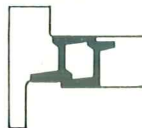
SLIDING

For a wood double hung window to operate freely, it must have a certain amount of loose, sliding clearance. The result is air leakage all around the window and at the meeting rail. This type window offers only 50 % opening.



SWINGING

Only one vent is needed to give 50 % opening with the metal casement. Yet there is 45 % less crack perimeter than in the sliding window. Also, the casement provides double contact of metal, and positive cam action locking.



PROJECTED

One metal projected vent gives 50 % window opening, with 45 % shorter crack perimeter than the sliding window. Double contact closing and secure locking give a weathertight seal all around between the vent and its framing members.



EASE AND SAFETY IN CLEANING



SLIDING

Dangerous sill-sitting or ladder climbing is necessary when washing the outside of sliding windows.



SWINGING

Extension hinges swing vents away from frame, allowing outside glass to be washed from the room side.



PROJECTED

Projected windows are washed outside by reaching through from inside—no ladders or sill-sitting.

EASE AND SAFETY IN SCREENING



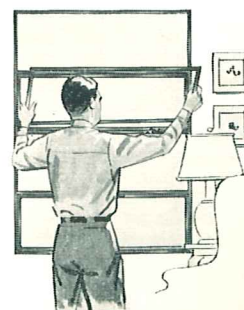
SLIDING

Awkward, outside screens for sliding windows are applied *outside*, often hazardingly from ladders.



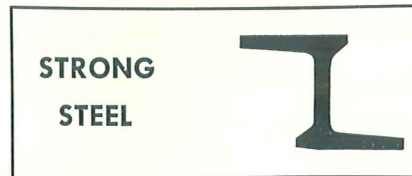
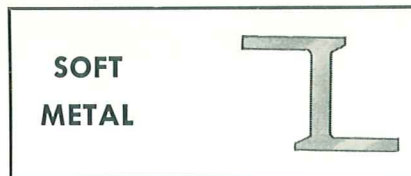
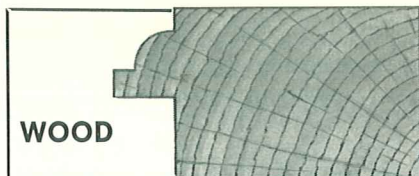
SWINGING

Metal screens for casements are safely attached *to the inside*, protected from the weather and dirt.



PROJECTED

Screens for tilt-out vents are *inside*. Screens for tilt-in vents are outside, attached safely from the *inside*.



UNIFORMITY

Wood varies widely in species, grades, strength, texture, porosity and moisture content.

Soft metals, such as aluminum and the alloys of aluminum, differ in their characteristics.

Hot-rolled carbon bar steel is uniform—the physical and chemical properties are standardized.

DIMENSIONAL STABILITY

Wood warps and swells in the humidity of summer and shrinks in the home-heat of winter.

Soft metals are stable and are not subject to unusual distortion from changes in the weather.

Strong steel is superlatively stable—the favorite material for use in precision instruments.

STRUCTURAL STRENGTH

Wood must be bulky to provide the strength and rigidity in windows intended for normal operation.

Aluminum sections for frames and muntins cannot match the strength of the same-size steel sections.

Strong steel alone invites the use of slender window members to provide the maximum glass area.

DURABILITY

Wood is of many varieties and many grades. An organic material, it is unpredictable. It is susceptible to mildew, rot, vermin, termites and splintering.

Aluminum dents, bends, scratches. Window frame corners may loosen. The hardware may pull off or break. Ventilators may sag from the weight of the glass.

Steel or iron stays strong. An example: iron casements in the University of Cambridge, England, installed in the year 1586, are in excellent condition today.

EFFICIENCY OF PROTECTIVE FINISH

Wood may be treated with chemicals to protect against mildew and rot; penetration varies with the texture of the wood, with evaporation occurring in dry weather. In humid weather, wood absorbs moisture, often causing its covering paint to loosen and scale.

Aluminum may receive protective coatings, such as special primers, lacquers and anodic treatments. When these fail and the bare metal is exposed, "white rust" (aluminum oxide) develops; the silver color of the metal changes to dull gray; pitting follows.

Steel may receive one of three or more kinds of protective coatings to prevent "red rust" (iron oxide): (1) metal prime-paint—fair; (2) Bonderizing plus metal prime-paint—good; (3) hot-dip galvanizing plus Bonderizing—excellent, proven protection.

TO HELP YOU SELECT

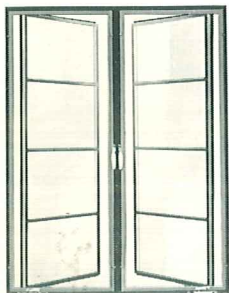
The Right *Fenestra* WINDOWS For Your Needs

PRODUCT . . .

VENTILATION PRINCIPLE

USES and APPLICATIONS

RESIDENCE CASEMENT WINDOWS



Probably the most desired of windows for the home. Equally good looking viewed from the street or from indoors. Well made, from solid hot-rolled steel, by craftsmen of America's oldest and largest manufacturer of steel windows: Fenestra. Furnished in a large selection of types and sizes to accommodate any architectural requirement.

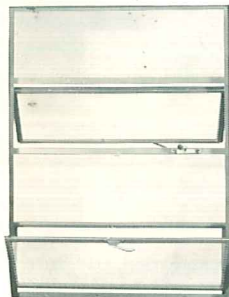
SWINGING VENTS



Fenestra casement vents swing out on bronze bushed hinges to catch the breeze and deflect it in. Casements with two vents catch breezes from three directions — right, left and head-on.

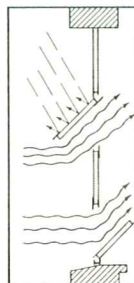
Used in living room, dining room, kitchen, bedroom — throughout the home—wherever such conveniences and benefits as more daylight, superior weathertightness, modern design beauty and controlled fresh-air ventilation are desired. They are ideal for use over furniture or over the kitchen sink with the easily-operated sill adjuster permitting effortless opening. Ideal also as flanking windows for fixed picture windows.

RESIDENTIAL PROJECTED WINDOWS



An awning-type window made from solid hot-rolled steel sections. Available with a projected-in ventilator at the sill if desired; other ventilators project out. Sill vent is operated by a locking handle; other vents operated by roto adjusters. Windows are furnished in many popular types and sizes, for various locations.

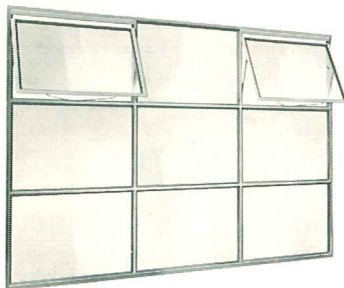
PROJECTED VENTS



Projected-out vents form canopies over the openings, shedding rain. Projected-in vents shed rain while deflecting drafts upward. Window permits ventilation in bad weather.

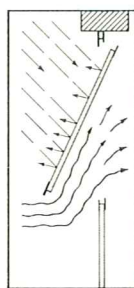
Projected windows can be used in any room of the home. They are specially desirable for the bedroom, where they may be left open at night to furnish draft-free fresh air without worrying about the damage to walls and furnishings that would result from a sudden rainstorm. They are well suited for the kitchen, too, permitting ventilation all day, rain or shine. Excellent for breezeways, terraces.

WINDOWALL UNITS (Picture Windows)



Very strong, but slender, steel frame members (1 1/4" sections) permit a large glass area for the greatest view of the outdoors. Window can be glazed with 1/2" insulating, double strength or plate glass.

PROJECTED VENTS



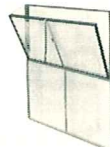
WindowAll vents swing out at the bottom and down from the top. They form protective canopies over the open window, shedding rain and snow while admitting the fresh air.

The WindowAll Unit is perfect for the living room, dining room, for enclosing a porch, or for any location where a truly modern picture window is desired. It provides both an expansive view of the outdoors and an opening portion for ventilation. The units are available in types and sizes for various requirements. Mullions may be used to combine units in extra large wall openings.

BASEMENT and UTILITY WINDOWS



Basement Window

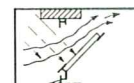


Utility Window

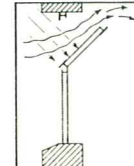
Fenestra Basement Windows are made of the same high quality hot-rolled steel sections used for Residence Casements. Their square frame corners permit weathertight wall installation.

Fenestra Utility Windows are made similar to Basement Windows, from the same high quality steel, but with fixed lights at bottom.

TILT-IN VENTS



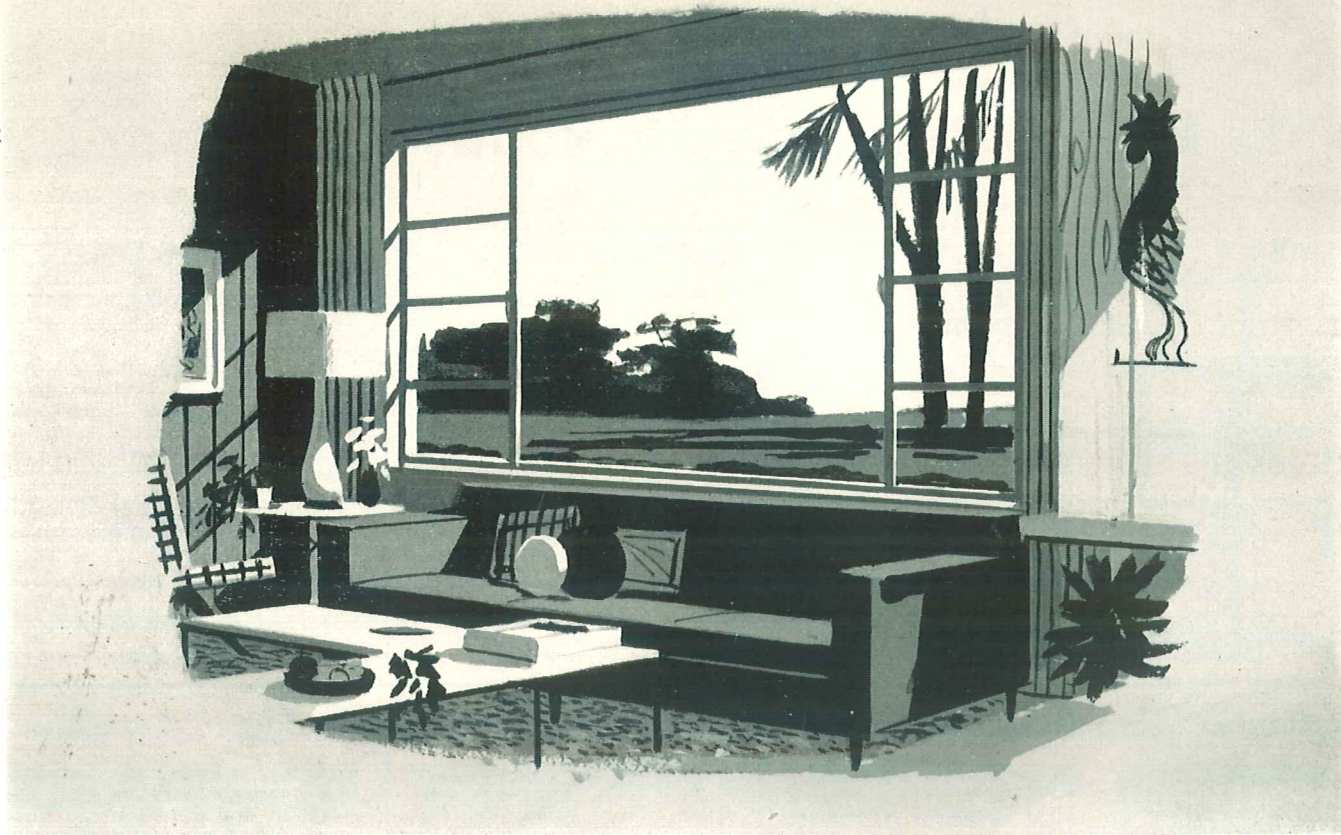
Basement Window vents swing in at the top to deflect drafts upward and shed the rain.



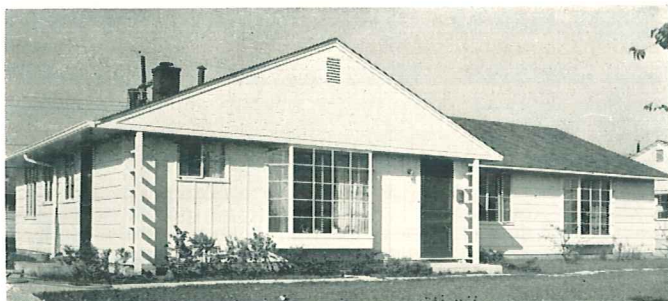
Utility Windows also swing in, deflect drafts and shed rain.

Basement Windows are designed for use in openings of concrete or cinder block walls, as found in most of today's basements. Also fit other construction. Used over workbench in garage.

Utility Windows are used in basements (especially the high downhill side), in basement areaways, garages and farm buildings.



Fenestra CASEMENT WINDOWS



J. E. Merrion Development, Chicago. Architect: Emil J. Minx.

Grosse Pointe, Michigan residence. Builder (and owner): A. W. Herschleb.



Fenestra Casements are often considered the finest made and the most attractive of residential type windows. They are built of slender hot-rolled solid steel sections, by window experts of long experience, and are selected for use in almost every style of home. Their exterior beauty is preserved by the use of Fenestra inside metal screens and Fenestra inside metal storm sash. The standard Bonderized finish protects the hard steel surface and provides a keying base for the factory-applied coat of prime paint. A Hot-Dip Galvanized and Bonderized finish, also available, eliminates field painting, permanently.

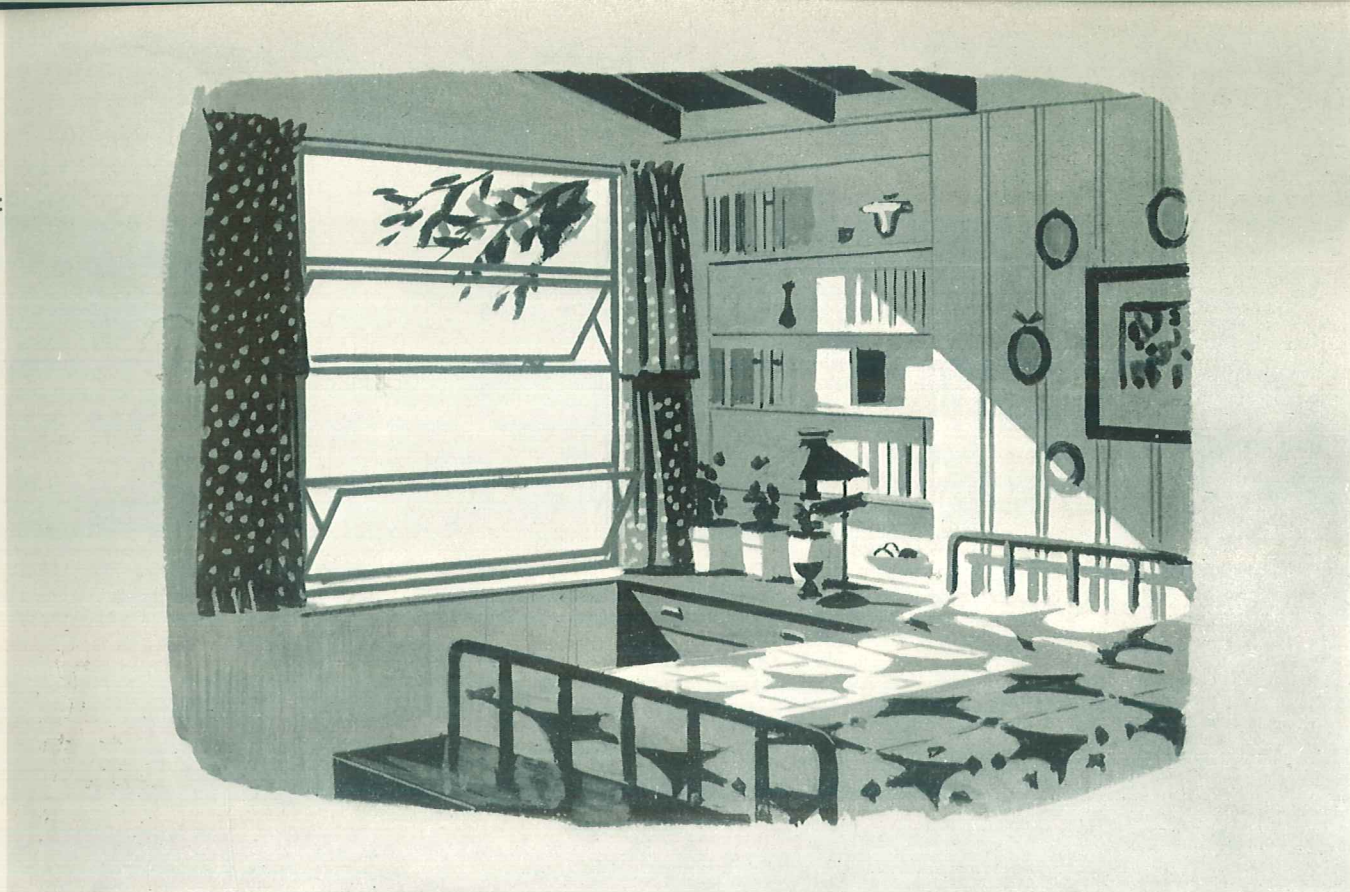
OTHER ADVANTAGES

1. **BEAUTY**—graceful steel lines harmonize with any architecture; fine hardware appointments.
2. **EASY OPENING**—vents swing instead of slide; operation is unaffected by weather changes.
3. **BETTER VENTILATION**—vents deflect breezes inward; windows offer up to 100 % opening.
4. **IMPROVED VIEW**—narrow steel sections permit large glass areas.
5. **WEATHERTIGHT**—double-contact weathering.
6. **SAFE CLEANING**—extension hinges allow outside glass areas to be washed from inside.
7. **AVAILABLE READY-TRIMMED**—Fenestra casements are available completely trimmed inside and outside to reduce installation time and cost.

For hardware, screens and storm sash see page 14.

For types and sizes see page 18.

For installation and other details see pages 20-24.



Fenestra PROJECTED (Awning) WINDOWS

Fenestra Residential Projected Windows combine the beauty of slender, horizontal lines and the convenience of awning-type, rain-shedding ventilators. A special Fenestra feature, available if desired, is an inswinging, draft-protecting ventilator for the sill. Metal screens and storm sash are available. The windows are Bonderized and prime painted at the factory. Hot-dip Galvanizing and Bonderizing is also available.

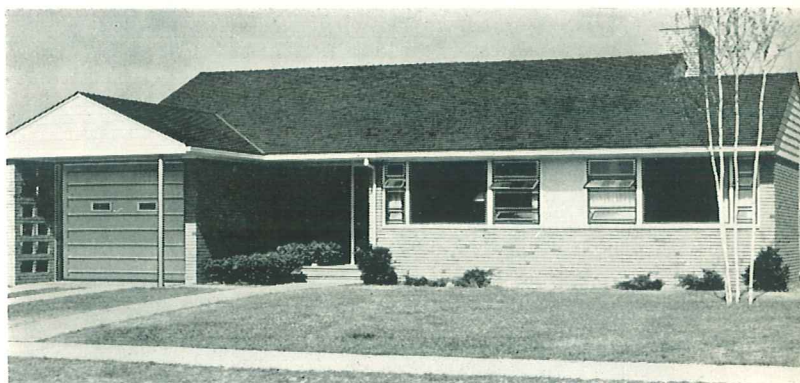
OTHER ADVANTAGES

1. **BETTER VENTILATION**—the vents permit fresh-air ventilation even when it is raining; tilt-in sill vent deflects breezes upward to prevent direct drafts.
2. **EASY OPERATION**—Fenestra ventilators, made of steel, always open and close at the touch of the hand.
3. **MORE DAYLIGHT, BETTER VIEW**—narrow steel sections allow more area for glass.
4. **WEATHERTIGHT** — made from Residence Casement sections that provide double-contact weathering all around ventilators.
5. **SAFE CLEANING**—both sides of window are washed from inside the room (a special release allows tilt-out vents to slide down from the top).
6. **AVAILABLE READY-TRIMMED**—window is furnished complete with outside-inside metal trim if desired, for quick, easy installation.

For hardware, screens and storm sash see page 14.

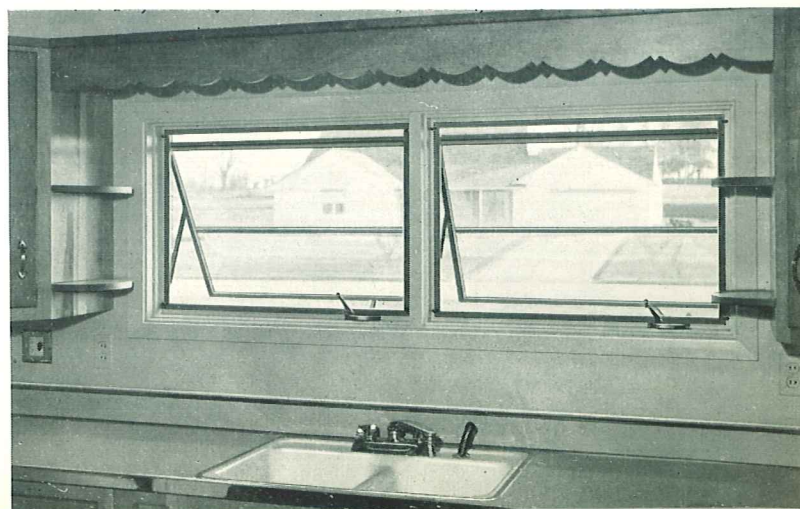
For types and sizes see page 19.

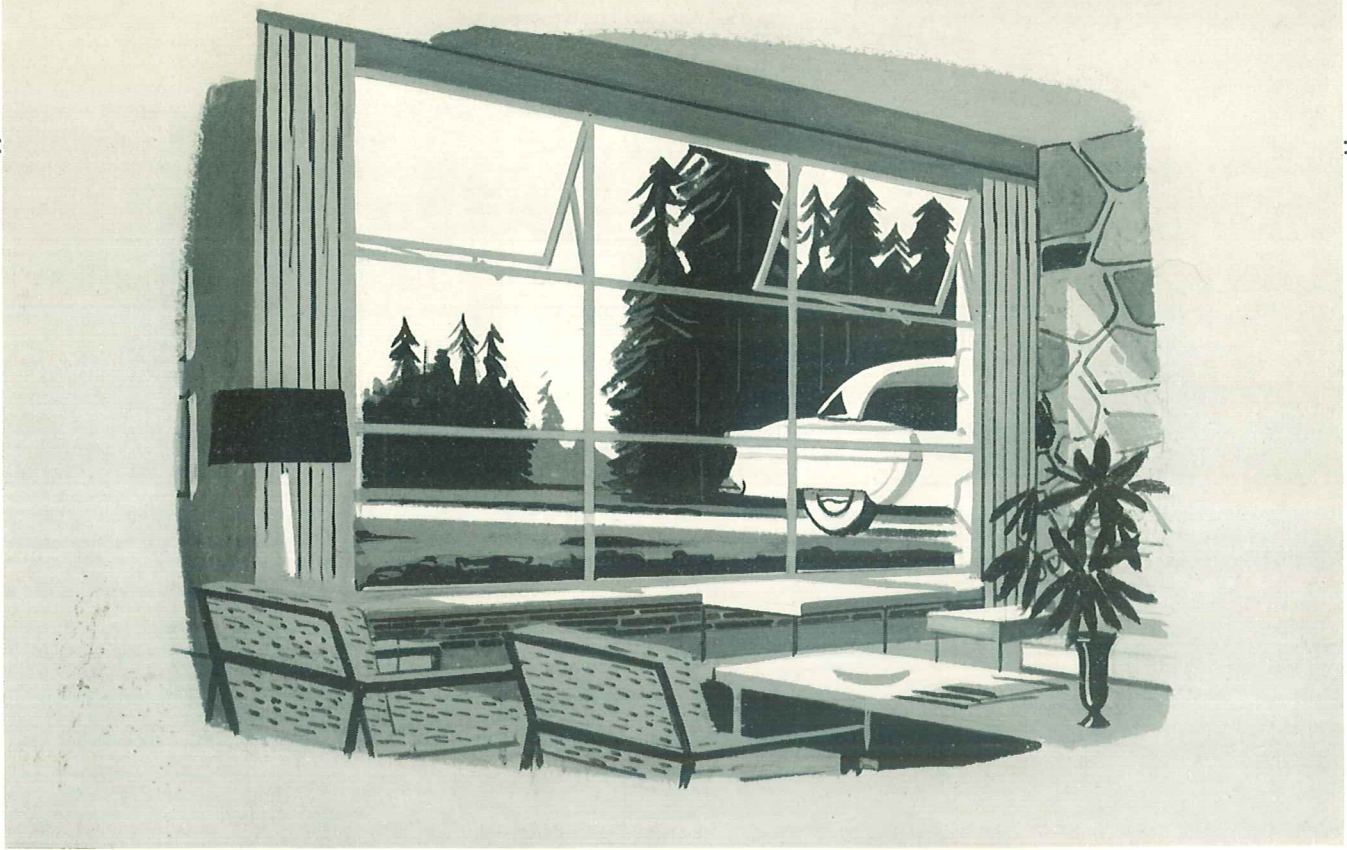
For installation and other details see pages 20-24.



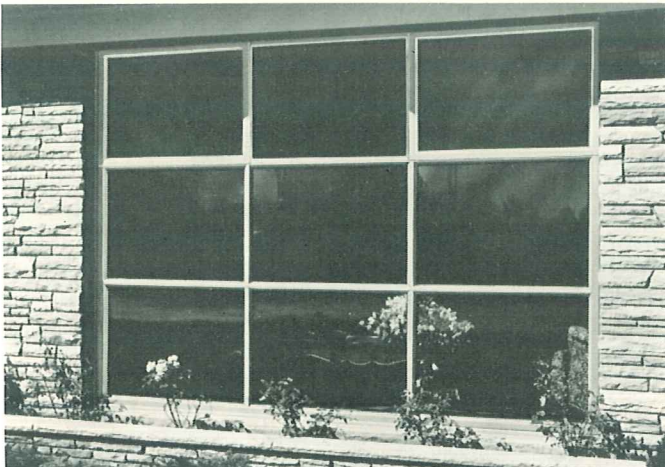
Projected Windows with Picture Windows, Detroit, Mich.

Baltimore, Md. home designed by A. S. Cochran. Contractor: Gilbert Building Co.





Fenestra WINDOWALL UNITS



Above and below: Exterior and interior, Warren Valley Rambler home, Valley View Subdivision, Detroit. Contractor: G. H. Pastor Company.



Fenestra WindowWalls, the modern picture windows, offer both ventilation and a view of the outdoors. Steel frames, ventilators and muntin bars—slender and a full $1\frac{1}{4}$ " deep—provide the extra strength required for large WindowWall openings. Projecting-out vents form weather-protecting canopies over the openings. The window can be glazed with stock cuts of plate, double strength or $\frac{1}{2}$ " insulating glass, as supplied by various glass manufacturers. Inside metal screens are available. The standard protective finish includes Bonderizing and prime painting. Hot-dip Galvanizing and Bonderizing is also available.

OTHER ADVANTAGES

1. **MORE LIGHT, BETTER VIEW**—steel window sections provide strength without bulk, leaving more window area for glass and daylight.
2. **EASY OPERATION**—ventilators are easily opened and closed by the turn of a roto adjuster.
3. **BETTER VENTILATION**—the awning-type, breeze-deflecting ventilators can be left open even when it is raining or blowing.
4. **WEATHERTIGHT**—double contact between frame and ventilator; precision manufactured by window craftsmen.
5. **QUICK, EASY INSTALLATION**—Fenestra inside metal casing is available to cut installation time and cost.

For hardware and screens see page 14.

For types and sizes see page 19.

For details and installation see pages 21 and 25.



Above: Residence Casements and WindoWall, Detroit, Michigan.

SOME INSTALLATIONS OF
Fenestra
 RESIDENTIAL STEEL WINDOWS



Right, top: Residential Projected and WindoWall, Springfield, Missouri.

Right, center: Residence Casements and WindoWall, Detroit.



Right, bottom: Residence Casements, Detroit. Architect: E. A. Pellerin.

Below: Residence Casements in group residences, Skokie, Illinois. Architect: R. F. Houlihan. Builder: C. A. Hemphill & Assoc.



Fenestra RESIDENTIAL STEEL WINDOWS . . .

LOCKING AND OPERATING HARDWARE

CASEMENT WINDOWS

LOCKING HANDLE



Part 7H
Enamel finish

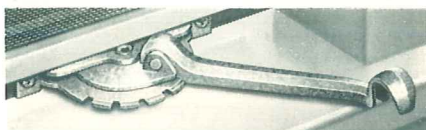
ROTO ADJUSTER



Part 56H. Enamel finish

Standard Fenestra hardware of iron and die cast is finished in a grey hammer (stippled) baked-on enamel.

LEVER ADJUSTER



Part 9H. Enamel finish

PROJECTED (AWNING) WINDOWS

ROTO ADJUSTER



Part 2310H
Enamel finish

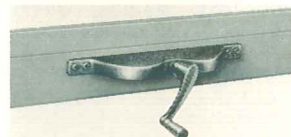
LOCKING HANDLE



Part 7H
Enamel finish

WINDOWALL UNITS

ROTO ADJUSTER



Part 2290H
Enamel finish

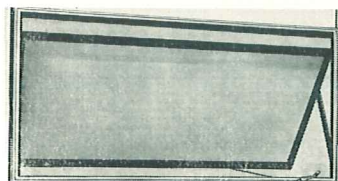
METAL SCREENS

CASEMENT WINDOWS



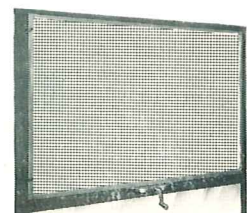
Narrow-framed Fenestra Screens fit snug against inside of window. They are attached in a jiffy—no ladder climbing. The steel frame will not warp to allow insects to enter. Screens are interchangeable for same-size vents and need not be marked if removed for storage. Vents are opened without touching the screens.

PROJECTED (AWNING)



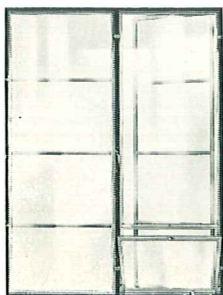
Each vent is screened separately; tilt-out vents on the inside, tilt-in vents on the outside. All screens are attached from inside the building.

WINDOWALL



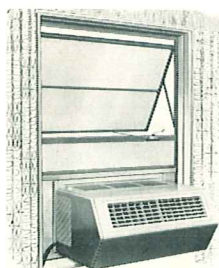
Screens for Windowalls are attached quickly and safely to the inside face of the window.

METAL STORM SASH CASEMENT WINDOWS



Fenestra Storm Sash lie flat against the inside of the case-ment. They are hardly notice-able from the inside—and they do not mar the archi-tectural beauty of the exterior of the home. Available with tilt-in sill vent (as shown) for winter ventilation.

AIR-CONDITIONING PROVISIONS



Beautiful, famous-name air-condition-ing units have been designed for use with either Fenestra Residential Pro-jected Windows, as illustrated (inside view), or with Fenestra Casements. Here is modern, air-conditioning com-fort at reasonable cost.

... SOME IMPORTANT FEATURES

METAL TRIM, CASINGS AND FINIS

OUTSIDE-INSIDE METAL TRIM

Fenestra Outside-Inside Trim permits simplified, low-cost installation of a single, ready-trimmed window unit. The unit consists of the complete outside-inside metal trim and either the Fenestra Casement or the Fenestra Projected Window. The trim sections are formed from galvanized steel, Bonderized and prime painted. Head and jamb sections are 18 gauge, sill sections 16 gauge.

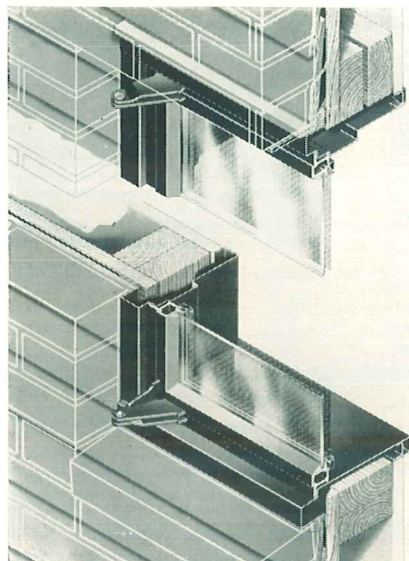
QUICK, EASY INSTALLATION

A continuous weathering fin projects all around the window opening and bears against the sheathing. The carpenter need only nail the fin to the sheathing through the nail holes that are provided. Installation is completed on the inside by inserting strap anchor clips into trim and nailing to the studs or furring. No grounds or special blocking are required.

OTHER ADVANTAGES

1. **SIMPLEST ROUGH OPENING PREPARATION**—locate studs and cripples, nail sheathing and cut sheathing flush; same rough opening preparation for frame, brick veneer or stucco.

2. **PROVIDES MOULD FOR MASON OR CARPENTER**—out-



Outside-Inside Trimmed Casement Unit

side trim makes an ideal stop for butting frame, brick or stucco.

3. **WEATHERTIGHT**—trim is made of one-piece sections tightly fitted at corners; unit is flashed on all four sides.

4. **PROVIDES "POCKET" FOR BLINDS**—trim is recessed in head and jambs to eliminate "light lines" around venetian blinds and shades.

5. **BEAUTY**—installed unit has a neat, finished appearance from both inside and outside.

INSIDE METAL CASINGS

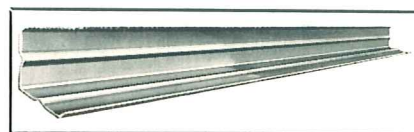
METAL TRIM WITH FIN—Saves entire cost of finishing window opening on the inside and provides a low-cost means of anchoring window to wall. Permits quick window installation in solid brick construction. Head and jamb are 18 gauge and sill 16 gauge. Bonderized and prime painted. For Casements and Projected Windows.

INSIDE METAL TRIM—Provides excellent interior installations in all types of construction. Eliminates stools, aprons and head and jamb trim. Head and jamb are 18 gauge, sill 16 gauge. Bonderized and prime painted. For Casements, Projected Windows, WindoWalls.

METAL JAMB AND HEAD FINIS

Available for use at the head and jambs. Bonderized and prime painted 16 gauge steel. For Casements and Projected Windows. (For full-size sections of trim, casings and fins see page 22).

FORMED STEEL LINTELS



Fenestra Lintels are made with a stiffening rib and mortar key in each leg. This construction gives increased strength to prevent sagging, provides a pocket and key for the bed mortar under the masonry, and permits lintels of lighter weight to reduce the weight of steel required in the home. Lintels are Bonderized and prime painted; also available Hot-Dip Galvanized and Bonderized. Furnished in ten stock lengths, from 2' 6" to 7' 0", two gauges, 9 and 11, and two sizes, 3½" x 3½" and 3½" x 4½".



Placing completely trimmed window unit in opening.



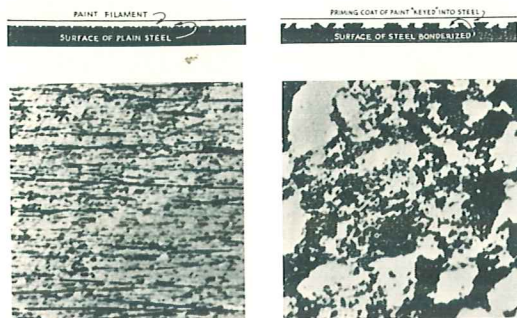
Nailing trim to sheathing.



Nailing anchor clips to studs.

Fenestra's SUPERIOR FINISHES

BONDERIZED-PRIME PAINTED



Cross-sections and microphotos of plain steel (left) and Bonderized-protected steel permit a comparison of paint-keying surfaces. Note the peaks and pits of the Bonderized metal, ideal footing for paint, as compared to the smooth, plain metal that provides virtually no paint-keying surface.

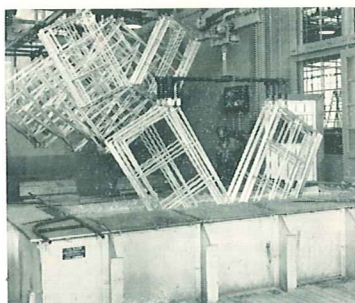
Bonderizing is a chemical process to protect the metal against oxidation and to provide a paint-adhering surface. The Fenestra Bonderized-prime painted finish is applied as follows:

Bonderizing. Windows are cleaned in a hot alkali solution to remove oil, grease and dirt, rinsed in hot water, immersed in Bonderite solution and rinsed in a dilute chromic acid solution.

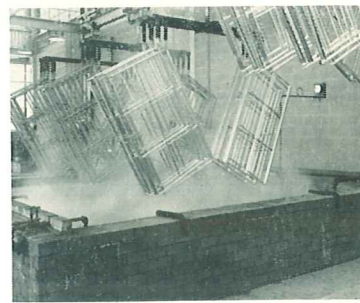
Painting. After air drying under controlled temperature, the windows receive a coat of primer specially developed for coating materials treated with phosphates. Windows are then oven dried for at least 30 minutes.

To assure uniformity the entire process of cleaning, Bonderizing and painting is continuous and automatic, without manual handling.

SUPER HOT-DIP GALVANIZED



Fenestra Windows being slowly withdrawn from the molten zinc after galvanizing.



Bonderizing, after galvanizing, gives the Fenestra Windows a soft, silvery finish.

Fenestra steel-strong windows will stay new always, without painting, when treated by the Fenestra Hot-Dip Galvanizing and Bonderizing process. The special-built Fenestra galvanizing plant, which is designed specifically for treating steel windows, permits complete immersion at each stage of the galvanizing process to give a smooth, uniform zinc coating. All steps in the process are controlled by the window manufacturer for superior quality. Bonderizing leaves the windows with an attractive, paint-adhering surface. Decorative paint, if desired, may be applied to Fenestra Galvanized-Bonderized Windows.

TIME-PROVED FINISH

Fenestra Windows, galvanized in commercial plants, have

been tested over a 38-year period in salt water wharfs, paper mills, tanneries and other buildings exposed to severe atmospheric conditions. These strong steel windows, never painted, are in excellent condition today.

GIVES BEST PROTECTION

Hot-dip galvanizing is recognized as the best protective coating for steel because it alloys with and becomes an integral part of the base metal and provides the heaviest and most uniform zinc coating.

In the Fenestra galvanizing plant, the vents and window frames are galvanized separately so that all exposed metal receives a protective coating. Then the vents are assembled in their frames.

SPECIFICATIONS FOR RESIDENCE WINDOWS

MATERIAL AND CONSTRUCTION—

Fenestra residential windows are made of hot-rolled, solid steel bars. Frame and ventilator members are Z-sections not less than 1" deep for Casements and Projected Windows and not less than 1¼" deep for WindoWalls. Double contact weathering is provided between frames and ventilators. Frames are prepared for the attachment of screen fittings.

VENTILATORS—Side hinged ventilators for Casements are hung on heavy steel extension hinges

equipped with steel rivets and bronze bushings.

Ventilators for Projected Windows and WindoWalls are balanced on two steel supporting arms pivoted to the frame and vent, and each is equipped with two bronze friction shoes arranged to slide in guides in the jamb weathering sections.

HARDWARE—Casement ventilators are provided with an operating adjuster at the sill and a cam handle for locking.

Each projected-out ventilator has

an operating adjuster at its sill. Each projected-in ventilator is furnished with a cam locking handle.

Standard Fenestra hardware is iron and die cast, with a baked-on enamel finish.

FINISH—The standard protective finish consists of Bonderizing and prime painting. Hot-dip Galvanizing-Bonderizing is available.

SCREENS—Screens have cold-rolled steel frames, Bonderized and prime painted. Screen cloth is fine-mesh bronze-lacquer finished wire. Bronze wire cloth is available.

Fenestra BASEMENT and UTILITY WINDOWS

BASEMENT WINDOWS

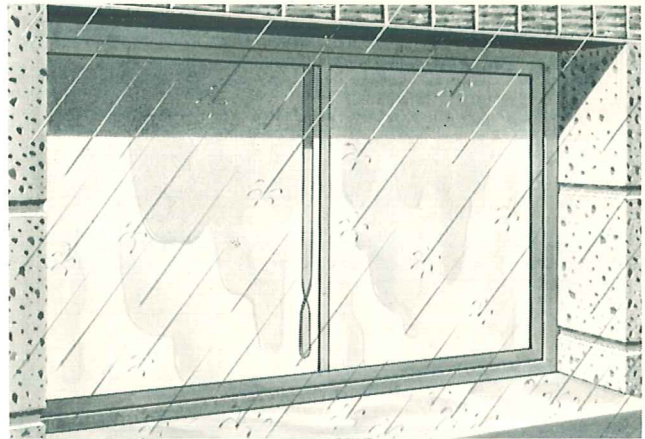
Fenestra Basement Windows are made from high-quality, solid, hot-rolled Residence Casement sections. Weather-tightness is assured by double contact closing all around the vent. An easily reached lever handle permits tight locking. Vents open in at the top to deflect drafts and shed rain. Protective finish: prime paint; also available Hot-dip Galvanized. Glazed if desired. Some advantages:



1. **LIFETIME DURABILITY**—heavy casement sections—no light gauge materials.
2. **MORE DAYLIGHT**—narrow steel frames allow large glass areas.
3. **EASY OPERATION**—steel ventilators always open easily; no side arms or hinges to bind.
4. **VERMIN PROOF AND FIRE SAFE**—all-steel construction.

SCREENS. Fenestra All-Metal Screens are quickly attached with two rust-proofed clips and screws. Frames are Bonderized and prime painted. The galvanized steel screen cloth is bronze lacquered.

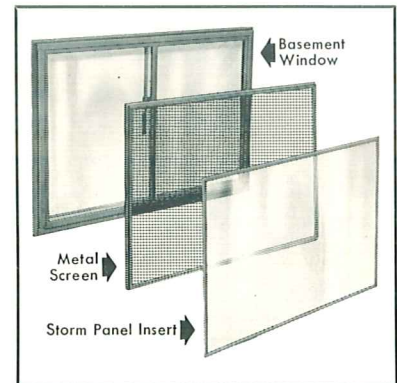
STORM PANELS. Fenestra Storm Sash is inserted in the screen frame and held by screen clips. The frame is Bonderized and prime painted.



Fenestra Hot-dip Galvanized Basement Windows offer superior protection at the grade level.

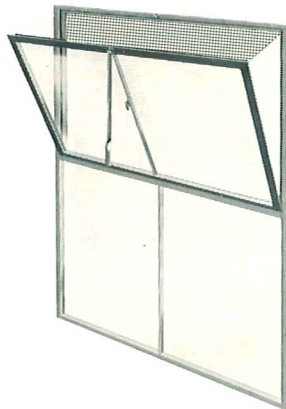
COMPLETE PACKAGE UNIT

Consists of a completely glazed window, a metal screen and a storm panel insert—all in one convenient carton. Available also without the storm panel, in carton.



UTILITY WINDOWS

Made like Basement Windows, from Casement sections, but with two fixed lights below the open-in ventilator. Used in basements, garages, dairy barns and other farm buildings. Prime-painted finish; also available Hot-dip Galvanized and Bonderized. Packaged if desired—contains glazed window and screen or glazed window, screen and two draft guards.



SCREENS. Same as Basement Windows. Precision made to be interchangeable in windows of the same size—no marking or numbering necessary if removed.

DRAFT GUARDS

Easily attached Fenestra Metal Draft Guards are available for use at each side of Utility Window ventilators—particularly desirable for dairy barns. Bonderized, gray painted 18-gauge steel. Ventilator can be opened 30° when Draft Guards are attached.

SIMPLE, QUICK INSTALLATION

Both Basement and Utility Windows are delivered completely assembled; there are no loose parts; hardware is attached at the factory. They are particularly designed to fit concrete block construction, but can just as easily be used in all other construction. Their square corners give a tight installation.

For Basement and Utility Window types and sizes see page 21.

Fenestra RESIDENCE CASEMENT TYPES AND SIZES

These types and sizes are for Eastern territory. For types and sizes for West Coast region (Washington, Oregon, California, Idaho, Nevada, Utah and Arizona) consult a local representative.

2'-2"	1'-7 $\frac{1}{8}$ " 1212	2'-7 $\frac{5}{8}$ " 2212-N	3'-1" 2212	3'-1" 2222	4'-5 $\frac{1}{8}$ " 3222	5'-9 $\frac{3}{8}$ " 4222	7'-7 $\frac{1}{2}$ " 5222	2'-2"
3'-2 $\frac{3}{8}$ "	1313	2313-N	2313	2323	3323	4323	5323	3'-2 $\frac{3}{8}$ "
4'-2 $\frac{5}{8}$ "	1414	2414-N	2414	2424	3424	4424	5424	4'-2 $\frac{5}{8}$ "
4'-2 $\frac{3}{8}$ "	1413	2413-N	2413	2423	3423	4423	5423	4'-2 $\frac{3}{8}$ "
5'-3"	1514	2514-N	2514	2524	3524	4524	5524	5'-3"

ALL TYPES SHOWN ARE STOCKED IN WAREHOUSES. FIXED UNITS AVAILABLE IN ALL SIZES SHOWN EXCEPT BULLSEYE. CONSULT REPRESENTATIVE FOR MUNTIN OMITTED UNITS. SINGLE SWING LEAVES MAY BE HINGED RIGHT OR LEFT (VIEWED FROM OUTSIDE). DOUBLE VENTED UNITS HINGED ONLY AS SHOWN. SIZES SHOWN ARE OVERALL WINDOW DIMENSIONS EXCEPT BULLSEYE (FRAME OF BULLSEYE EXTENDS $\frac{1}{8}$ " BEYOND WINDOW DIMENSION).



GLASS FOR BULLSEYE

1	15 $\frac{1}{4}$ " x 15 $\frac{1}{4}$ "
2	3 $\frac{1}{2}$ " x 16 $\frac{3}{4}$ "

CUT TO TEMPLATE

GLASS SIZES

A	16" x 12" H	17 $\frac{1}{4}$ " x 12"
B	16" x 11 $\frac{5}{8}$ " I	15 $\frac{1}{4}$ " x 12"
C	14" x 12"	18" x 12"
D	14" x 11 $\frac{5}{16}$ "	

TYPES FOR INSULATING GLASS

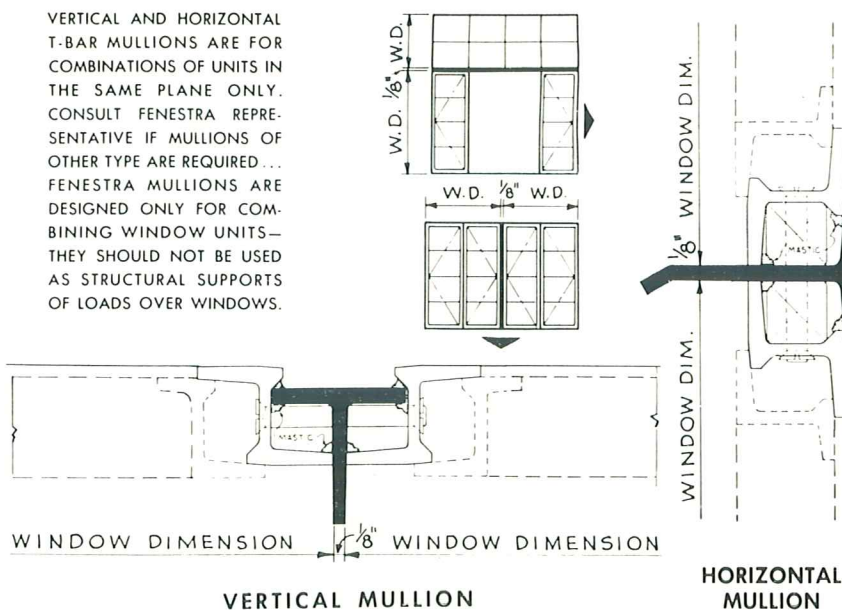


TYPES BELOW ARE STANDARD FOR INSIDE GLAZING WITH $\frac{1}{2}$ " TO $\frac{1}{8}$ " THICK INSULATING GLASS.

4'-5 $\frac{1}{8}$ " 50 $\frac{3}{8}$ " / 47 $\frac{3}{4}$ " 34-DG	5'-9 $\frac{3}{8}$ " 66 $\frac{5}{8}$ " / 47 $\frac{3}{4}$ " 44-DG
5'-3" 50 $\frac{3}{8}$ " / 60 $\frac{1}{8}$ " 35-DG	66 $\frac{5}{8}$ " / 60 $\frac{1}{8}$ " 45-DG

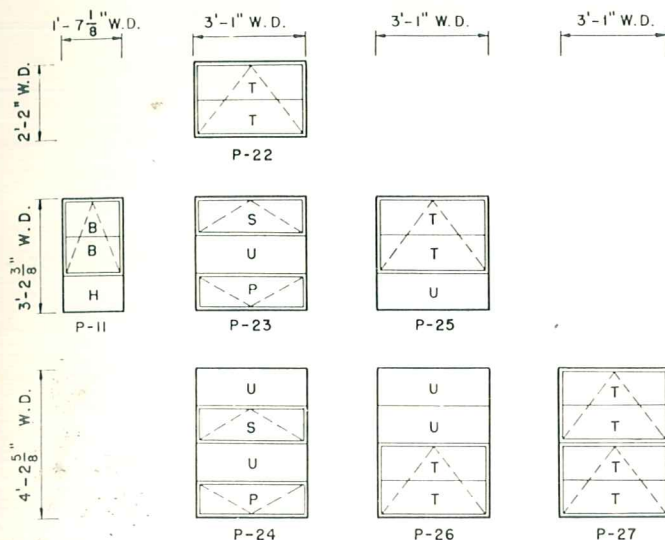
FENESTRA STEEL MULLIONS FOR COMBINING UNITS

VERTICAL AND HORIZONTAL T-BAR MULLIONS ARE FOR COMBINATIONS OF UNITS IN THE SAME PLANE ONLY. CONSULT FENESTRA REPRESENTATIVE IF MULLIONS OF OTHER TYPE ARE REQUIRED... FENESTRA MULLIONS ARE DESIGNED ONLY FOR COMBINING WINDOW UNITS—THEY SHOULD NOT BE USED AS STRUCTURAL SUPPORTS OF LOADS OVER WINDOWS.



Fenestra PROJECTED (AWNING) TYPES AND SIZES

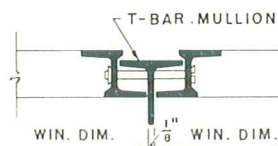
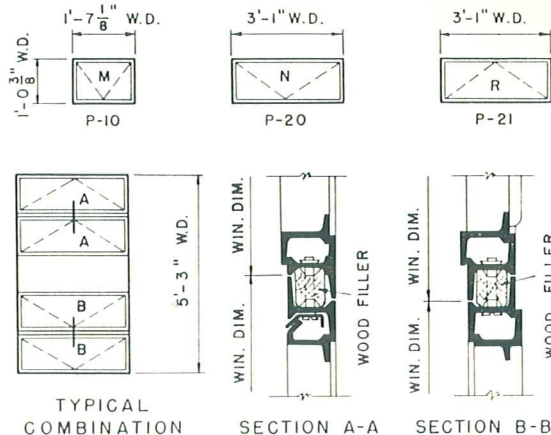
BASE UNITS



GLASS SIZES

B	16" x 11 5/16"	N	33" x 9 3/4"	S	34" x 10 5/8"
H	17 1/4" x 12"	P	33" x 10 5/8"	T	34" x 11 5/16"
M	15" x 9 3/4"	R	34" x 9 3/4"	U	35 3/16" x 12"

BOLT-ON UNITS

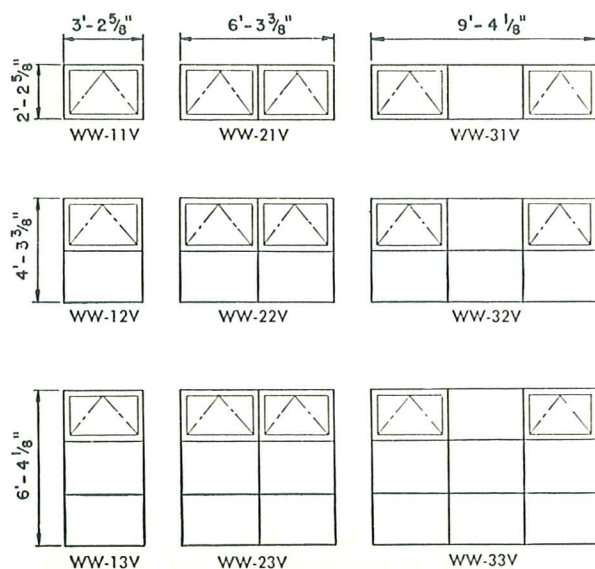


VERTICAL MULLION

NOTES
BOLT-ON UNITS MAY BE COMBINED VERTICALLY WITH BASE UNITS WITHOUT USE OF MULLIONS, AS SHOWN ABOVE. VERTICAL COMBINATIONS OF BASE UNITS (ONLY) AND ALL HORIZONTAL COMBINATIONS REQUIRE T-BAR MULLIONS.

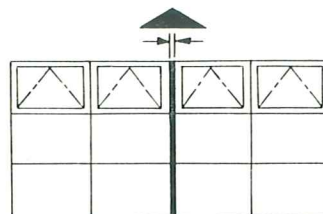
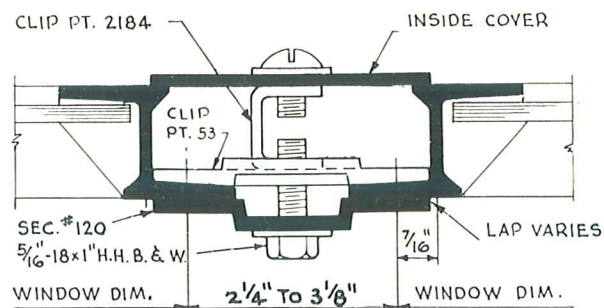
Fenestra WINDOWALL TYPES AND SIZES

WindoWall units here shown are for Eastern territory. For WindoWall units for West Coast region (Washington, Oregon, California, Idaho, Nevada, Utah and Arizona) consult a local representative.



SIZES SHOWN ON DIAGRAMS ARE WINDOW DIMENSIONS
GLASS SIZES: FIXED LIGHTS, 36" x 24"; VENTILATOR LIGHTS, 34" x 21 1/4"

MULLION DETAILS



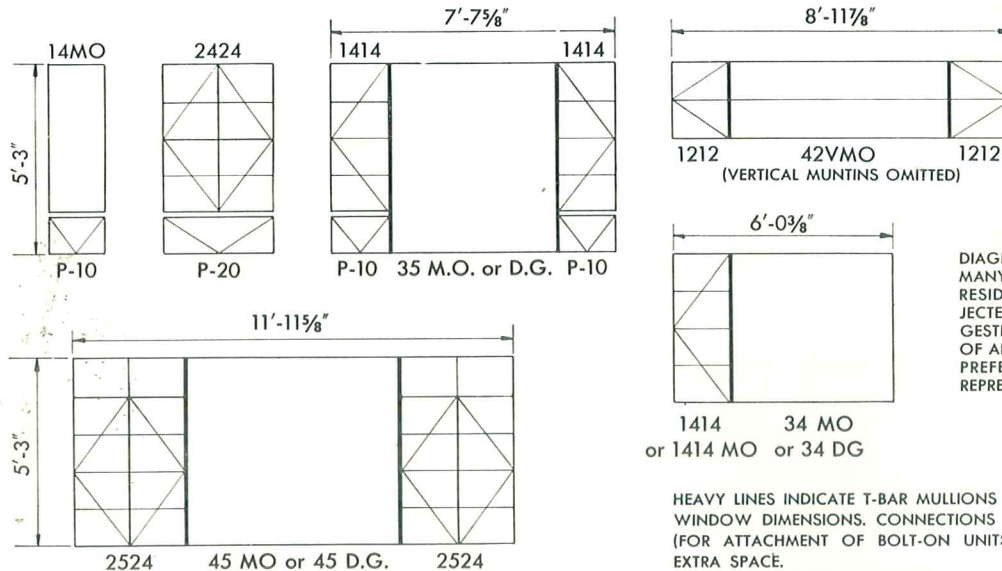
TYPICAL COMBINATION

SUGGESTIONS FOR COMBINING RESIDENCE WINDOWS

Combinations shown on this page are for 1" section windows (Casement and Projected). 1 1/4" section WindoWall units cannot be combined with these windows.

TYPICAL COMBINATIONS OF RESIDENCE CASEMENTS

(including Combinations with Bolt-on Projected Units)



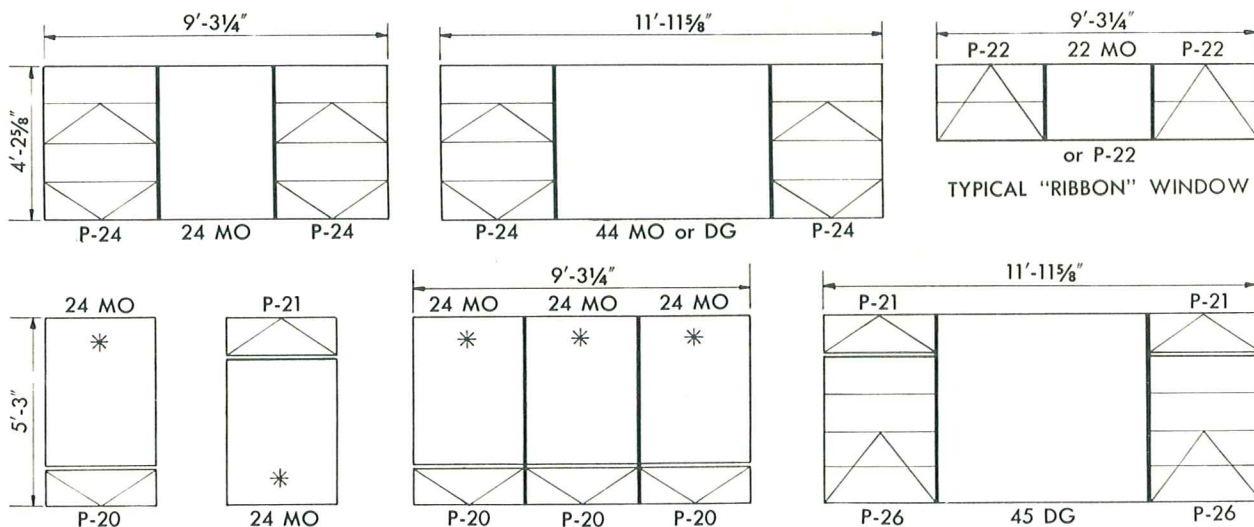
TYPICAL
"RIBBON"
WINDOW

DIAGRAMS SHOW BUT A FEW OF MANY POSSIBLE COMBINATIONS OF RESIDENCE CASEMENTS AND PROJECTED WINDOWS. FOR OTHER SUGGESTIONS TO MEET REQUIREMENTS OF ARCHITECTURAL DESIGN OR LOCAL PREFERENCES CONSULT FENESTRA REPRESENTATIVE.

HEAVY LINES INDICATE T-BAR MULLIONS REQUIRING 1/8" SPACE BETWEEN WINDOW DIMENSIONS. CONNECTIONS SHOWN BY UNFILLED OUTLINES (FOR ATTACHMENT OF BOLT-ON UNITS) REQUIRE NO MULLIONS OR EXTRA SPACE.

TYPICAL COMBINATIONS OF RESIDENTIAL PROJECTED WINDOWS

(including Combinations with Fixed Casements [without muntins] or D.G. Casements)



*ALTERNATE HEIGHTS ARE POSSIBLE IN THESE COMBINATIONS BY SUBSTITUTING 23 MO OR 25 MO UNITS FOR THE 24 MO UNITS SHOWN. WITH 23 MO THE OVERALL HEIGHT IS 4'-2 1/4", WITH 25 MO THE OVERALL HEIGHT IS 6'-3 3/4".

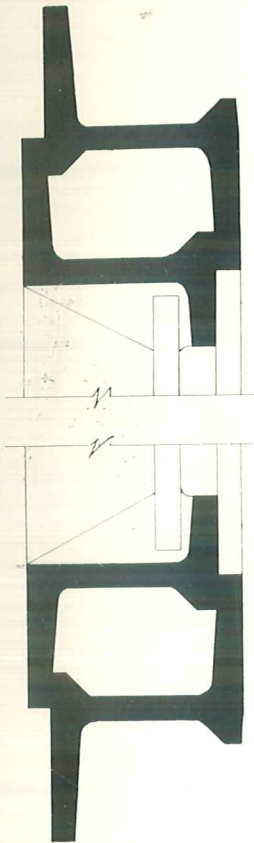
DIAGRAMS SHOW BUT A FEW OF MANY POSSIBLE COMBINATIONS OF RESIDENTIAL PROJECTED WINDOWS. FOR OTHER COMBINATIONS TO MEET THE REQUIREMENTS OF ARCHITECTURAL DESIGN OR LOCAL PREFERENCES SEE FENESTRA REPRESENTATIVE.

HEAVY LINES INDICATE T-BAR MULLIONS REQUIRING 1/8" SPACE BETWEEN WINDOW DIMENSIONS (SEE DETAIL ON PAGE OF RESIDENCE CASEMENT TYPES AND SIZES). CONNECTIONS SHOWN BY UNFILLED OUTLINES (INDICATING ATTACHMENT OF BOLT-ON UNITS) REQUIRE NO MULLIONS OR EXTRA SPACE (SEE DETAIL ON PAGE OF RESIDENTIAL PROJECTED WINDOW TYPES AND SIZES).

HORIZONTAL T-BAR MULLIONS ARE ALSO AVAILABLE FOR USE IN COMBINING CASEMENTS AND/OR PROJECTED UNITS IN VERTICAL BAYS IF DESIRED. SEE PAGE ON CASEMENT TYPES.

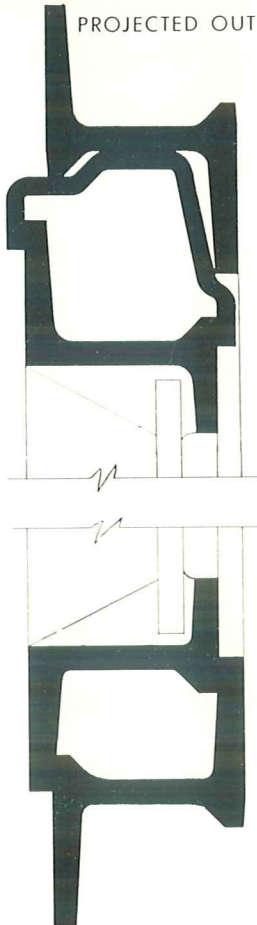
TYPICAL SECTIONS OF RESIDENCE WINDOWS

RESIDENCE
CASEMENTS

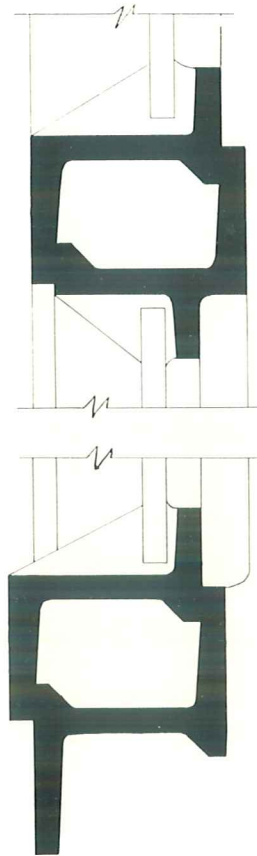


RESIDENTIAL PROJECTED (AWNING)

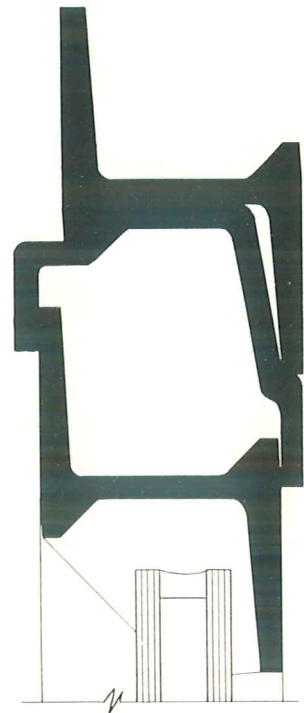
PROJECTED OUT



PROJECTED IN



WINDOWALL
UNITS

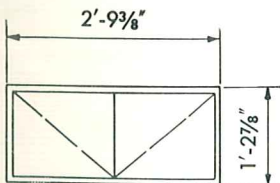


ABOVE DETAIL IS FOR 1 1/4" SECTION WINDOWALL UNIT. FOR 1" SECTION UNIT CONSULT REPRESENTATIVE. INSULATING GLASS SHOWN.

BASEMENT AND UTILITY TYPES AND SIZES

BASEMENT WINDOWS

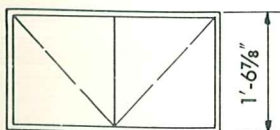
UTILITY WINDOW



SIZES SHOWN ARE OVER-ALL WINDOW DIMENSIONS

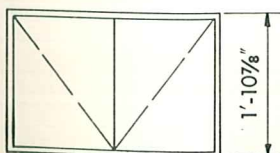
2 LIGHTS
15" x 12"

VENT LIGHTS
15" x 20"

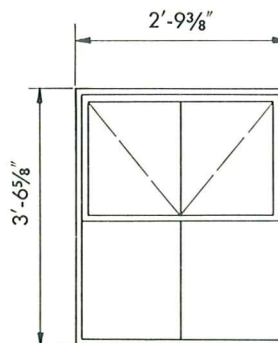


2 LIGHTS
15" x 16"

FIXED LIGHTS
15 5/8" x 19 3/8"

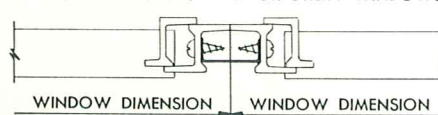


2 LIGHTS
15" x 20"



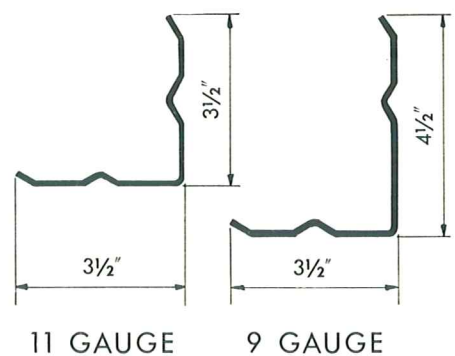
VERTICAL MULLION

FOR COMBINING BASEMENT OR UTILITY WINDOWS



PRESSED STEEL LINTELS

SECTION SIZES AND LENGTHS



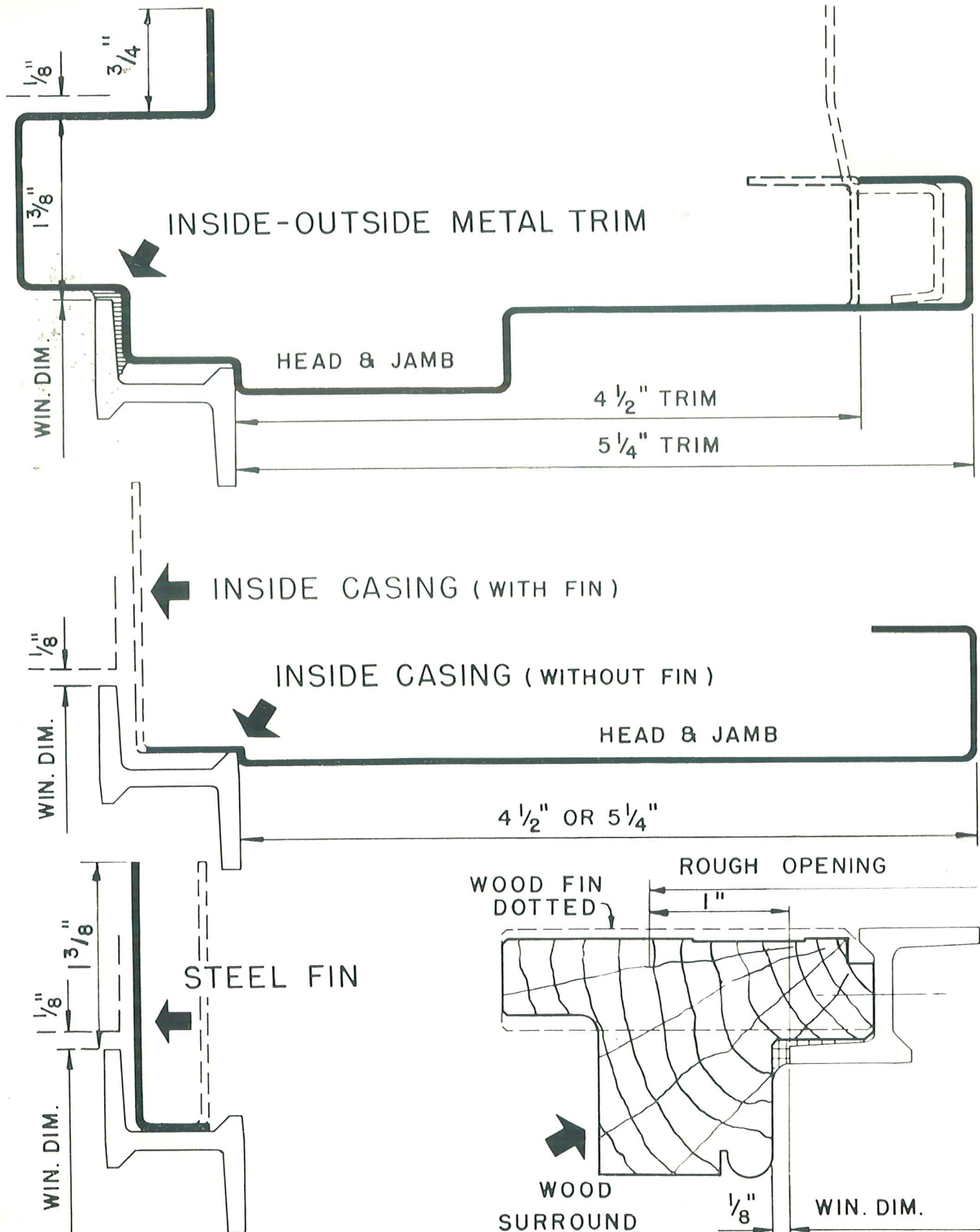
11 GAUGE

9 GAUGE

STOCK LENGTHS OF LINTELS					
11 GAUGE			9 GAUGE		
2'-6"	3'-0"	3'-6"	5'-0"	5'-6"	6'-0"
4'-0"	4'-6"		6'-6"	7'-0"	

Fenestra INSTALLATION ACCESSORIES (Full Size)

Accessories shown are for use with 1" section windows (Casement and Projected). For accessories used with 1 1/4" section WindoWall units, consult Fenestra representative.

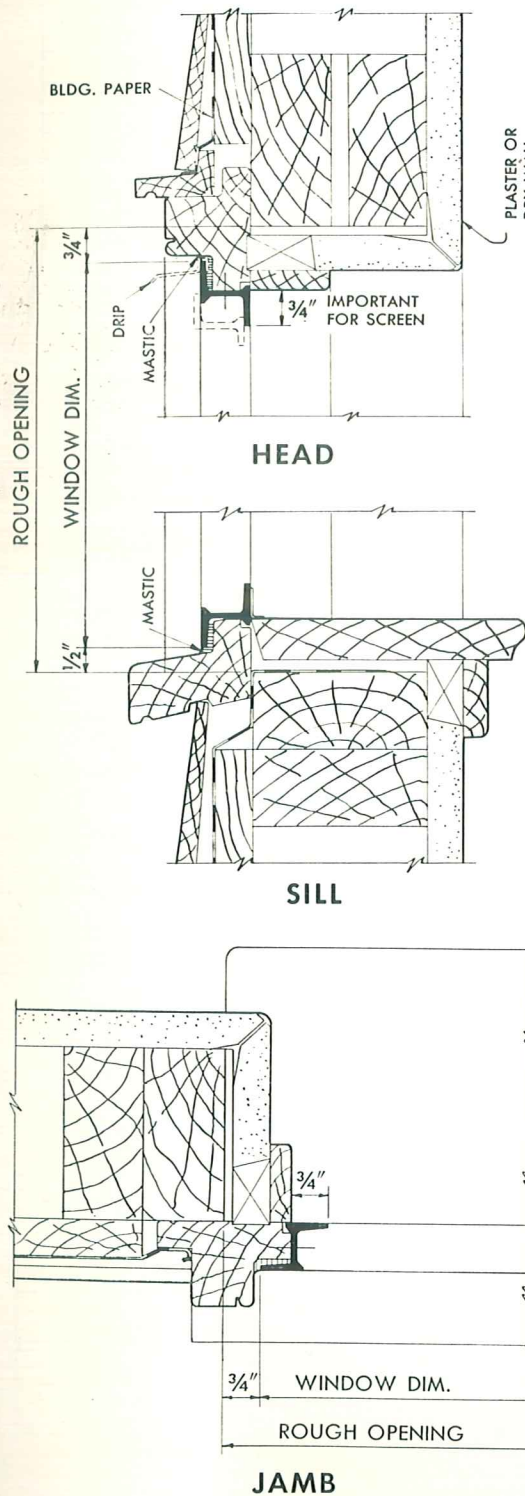


SOME TYPICAL INSTALLATION METHODS

Details shown apply only to 1" section windows (Casement and Protected). For installation of 1 1/4" section WindowWall units see page 25.

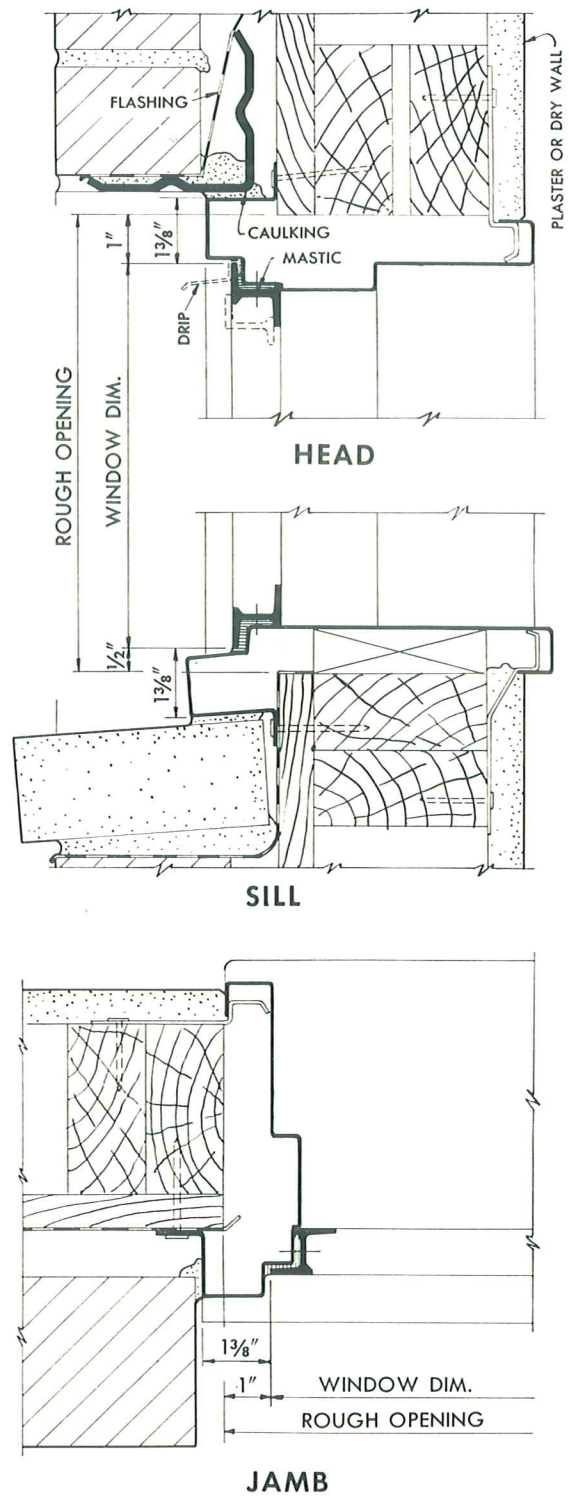
FRAME CONSTRUCTION

WITH WOOD SURROUND AND PLASTER RETURN



BRICK VENEER

WITH OUTSIDE-INSIDE METAL TRIM

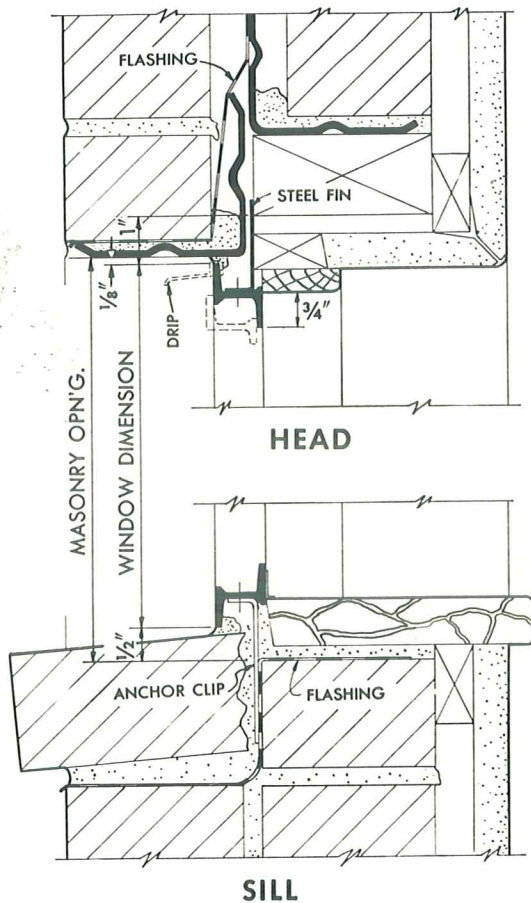


SOME TYPICAL INSTALLATION METHODS

Details shown apply only to 1" section windows (Casement and Projected). For installation of 1 1/4" section WindoWall units see page 25.

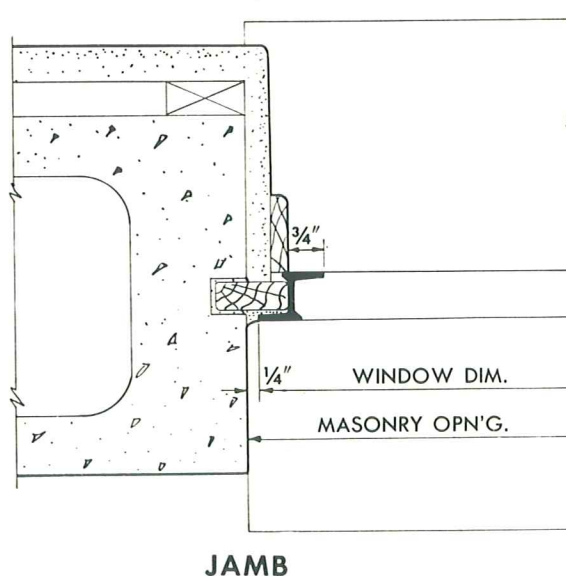
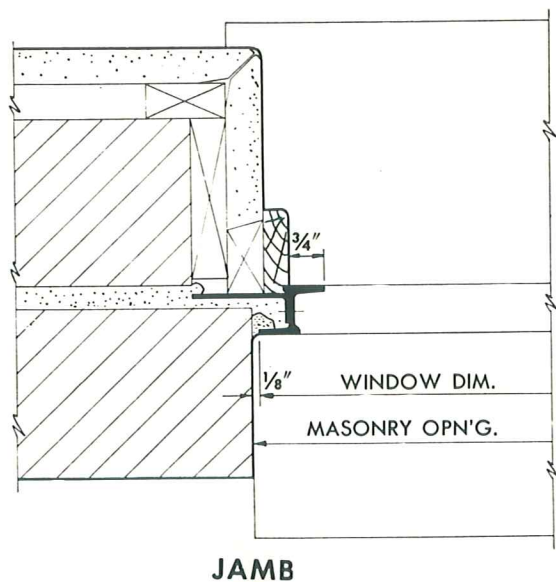
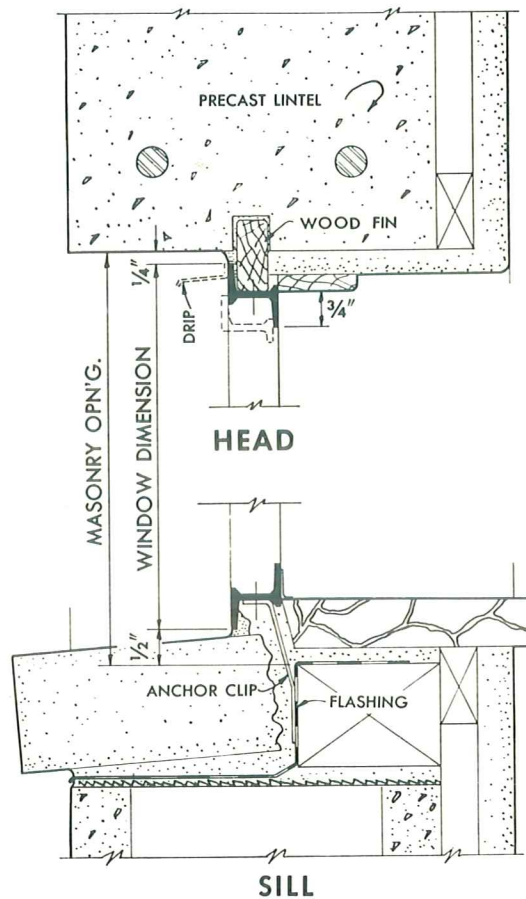
SOLID BRICK

WITH STEEL FIN

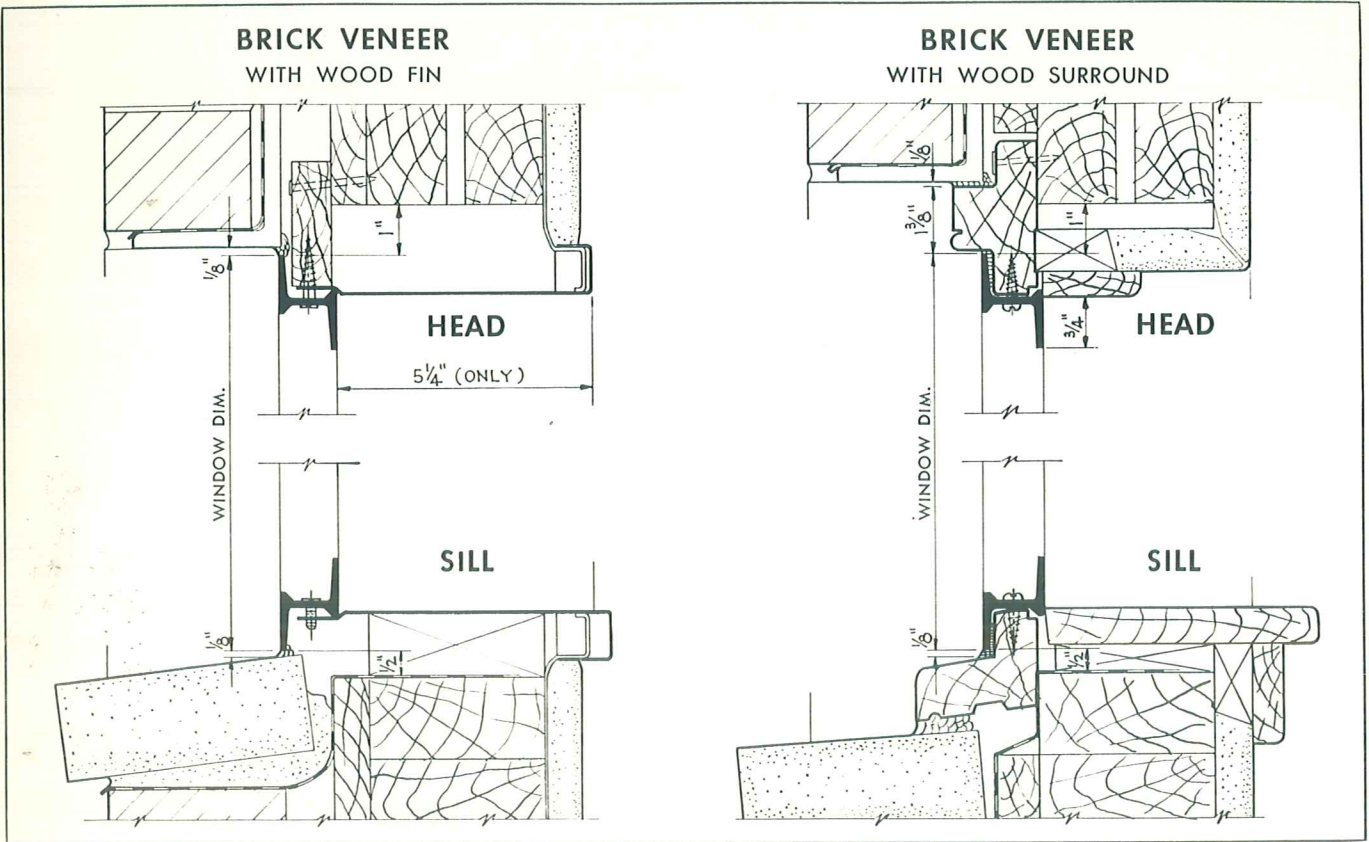


CONCRETE BLOCK

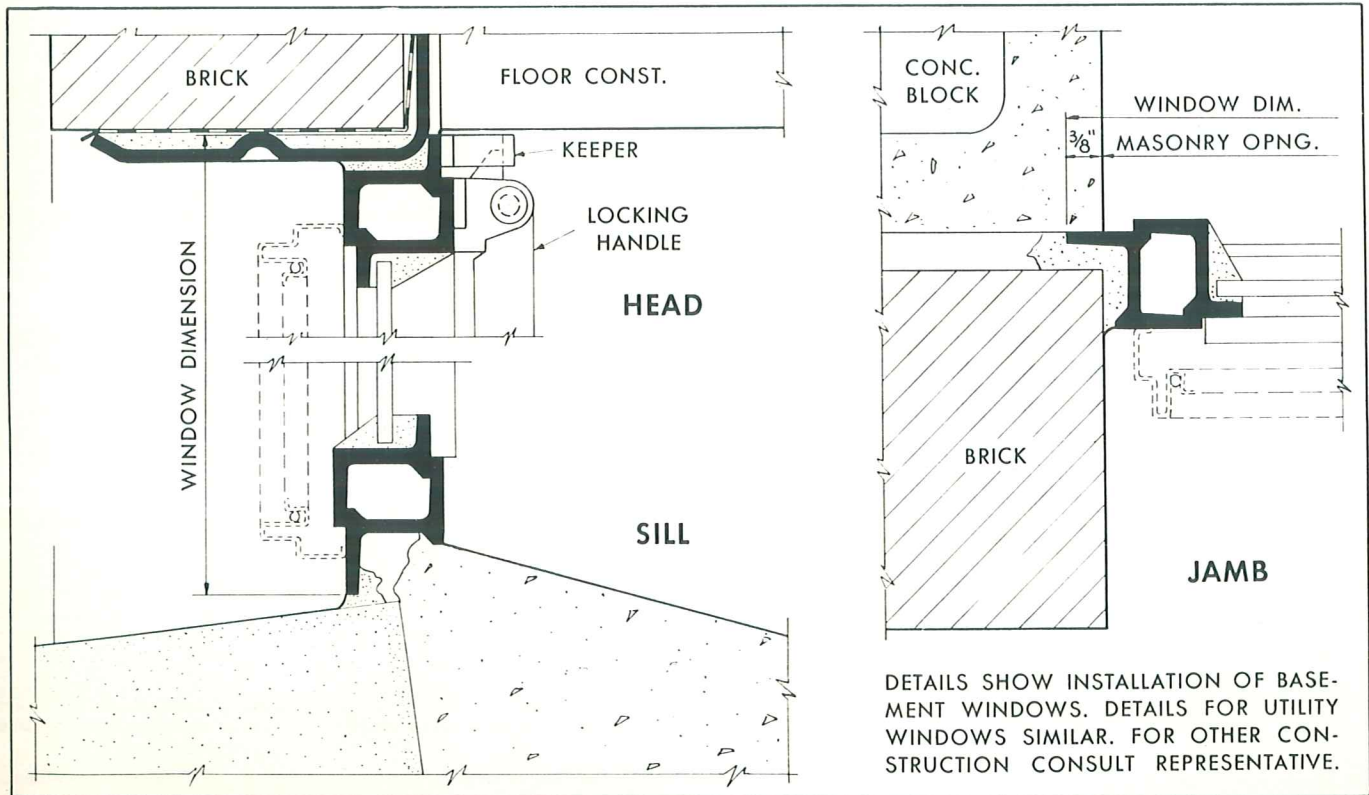
WITH WOOD FIN



INSTALLATION METHODS FOR WINDOWALL (1¼" Sections)



INSTALLATION OF BASEMENT and UTILITY UNITS



Fenestra RESIDENTIAL DOOR PRODUCTS



1 $\frac{3}{8}$ " INTERIOR SWING DOORS

Fenestra now offers the homeowner new conveniences, a freedom from troubles, and lasting beauty in interior doors. Made of steel, Fenestra Doors always open easily—dampness can't cause swelling or sticking. And steel won't crack when the room air becomes dry. Door is coated inside with noise-deadening material for extra quiet operation. Reinforcing channel stiffeners, spaced every 8 $\frac{1}{2}$ ", provide a smooth, solid surface. Door is furnished conveniently packaged, with knocked-down frame and hardware—a complete low-cost unit—ready for quick, labor-saving, time-saving installation. Both door and frame are factory machined and prime painted. Choice of cylinder type, key-in-knob locks, finished in bronze or white metal. Six stock sizes, in widths of 1' 6", 2' 0", 2' 4", 2' 6", 2' 8" and 3' 0", and 6' 8" high. Other sizes are available shipped from the factory.



SPACE-SAVING SLIDING CLOSET DOORS

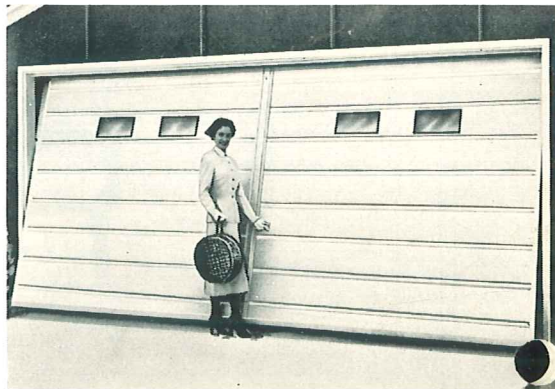
Fenestra Metal Sliding Closet Doors save many square feet of floor space compared to closet doors that swing out into the room. They are beautiful whether painted to match the room decor or ordered with the factory-applied birch finish. Doors to be painted on the job are given a coat of protective grey primer at the factory. Operation is smooth (steel can't warp, stick or sag) and quiet (lifetime nylon rollers and rubber bumpers). Delivered as complete packaged unit, with hardware, track equipment, side-guides and header—a screwdriver is the only installation tool needed. Handsome recessed fingerpulls just snap into place. Wonderful for bedroom closets, built-in wardrobes, attic storage cabinets and utility rooms. Entire closet area can be exposed to full view. Two stock sizes: 4' 0" x 6' 8" and 5' 0" x 6' 8". Other sizes available shipped from factory.

STRAND GALVANNEALED STEEL GARAGE DOORS



Canopy type single Strand Door.

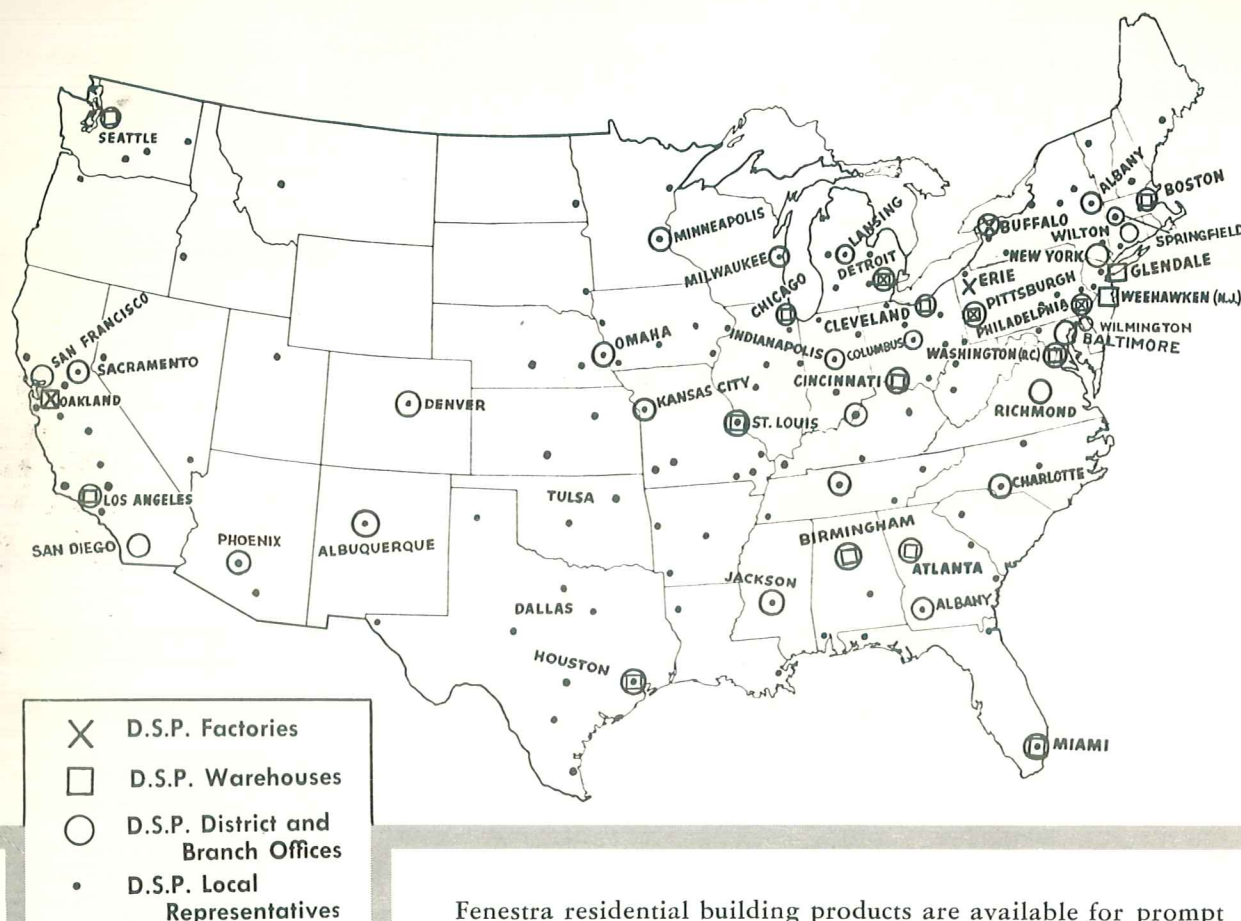
Handsome overhead garage doors that open and close almost effortlessly. Made of strong galvanized steel. Rubber weatherstrip seals bottom opening when door is closed, shutting out rain and drafts. Adjustable springs at each side. Door easily installed by one man. Only 2" headroom necessary. Three sizes: 8' x 7', 9' x 7' (canopy and receding) and 16' x 7' (receding). Vision lights are available.



Receding (track type) double Strand Door.

Separate folders, available on request, give complete information about 1 $\frac{3}{8}$ " Swing Doors, Sliding Closet Doors and Garage Doors.

Fenestra's NATION-WIDE STOCKS AND DISTRIBUTION



Fenestra residential building products are available for prompt delivery to the building site from hundreds of local stocks, served by 18 strategically-located factory warehouses (see map above, and lists below and on back cover).

FENESTRA'S WAREHOUSE STOCKS ASSURE QUICK DELIVERY

ATLANTA, GA.

690 Murphy Ave., S.W.

BIRMINGHAM, ALA.

2428 Second Ave., South

CAMBRIDGE, MASS.

265 Vassar Street

CHICAGO, ILL.

2000 N. Ruby Street

CINCINNATI, OHIO

1756 Tennessee Ave.

CLEVELAND, OHIO

13801 Triskett Road

DETROIT, MICH.

11345 Mound Road

EMERYVILLE, CALIF.

6355 Hollis Street

FERNWOOD, PA.

53 South 3rd St.

GLENDAL, N. Y.

79-40 Cooper Ave.

HOUSTON, TEXAS

1525-A North Post Oak Rd.

LOS ANGELES, CALIF.

5026 E. Slauson Ave.

MIAMI, FLA.

7285 N. W. 36th Ave.

PITTSBURGH, PA.

434 Melwood Street

ST. LOUIS, MO.

4501 North Broadway

SEATTLE, WASH.

110 Stacy Street

WASHINGTON, D. C.

4th & Channing Sts., N. E.

WEEHAWKEN, N. J.

17 West 18th Street

DETROIT STEEL PRODUCTS COMPANY

General Offices: 2250 East Grand Blvd., Detroit 11, Michigan
Factories at Detroit, Buffalo, Philadelphia, Oakland, Pittsburgh and Erie.

Local Representatives in 200 Principal Cities. See "FENESTRA
BUILDING PRODUCTS COMPANY" in the local Telephone Directory

ATLANTA 690 Murphy Ave., S. W.
ALBANY (1) N. Y. 11 North Pearl Street
BALTIMORE (2) 8 East Mulberry Street
BIRMINGHAM (5), ALA. 2428 Second Ave., S.
BOSTON (39) (Cambridge) 265 Vassar Street
BUFFALO (11) 1210 East Ferry Street
CHICAGO (Melrose Park) 2000 N. Ruby Street
CHARLOTTE, N. C. 314 W. Trade Street
CINCINNATI (29) 1756 Tennessee Ave.
CLEVELAND (11) 13801 Triskett Road
COLUMBUS (15) 8 East Broad Street
DENVER (3) 969 Lincoln St.
DETROIT (19) 19300 W. 7 Mile Road
HARRISBURG, PA. 1831 N. Cameron Street
HOUSTON (24) 1525-A N. Post Oak Road

INDIANAPOLIS (4) 401 N. Illinois Street
KANSAS CITY, MO. 3937 Main Street
LANSING (15) 506 North Washington Ave.
LOUISVILLE (7) 3929 Frank Ave.
MIAMI (47) 7285 N. W. 36th Ave.
MINNEAPOLIS 1201 Foshay Tower Bldg.
NEW YORK (27) (Brooklyn) ... 79-40 Cooper Ave.
OMAHA (2) Omaha National Bank Bldg.
PHILADELPHIA (3) 905 Architects Bldg.
PITTSBURGH (13) 434 Melwood Street
RICHMOND, VA. 507 E. Franklin Street
ST. LOUIS (7) 4501 North Broadway
SPRINGFIELD, MASS. 344 Columbus Ave.
WASHINGTON (5) 14th and K Streets, N.W.
WEEHAWKEN, N. J. 17 West 18th Street

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General Office: 1310 63rd St., Emeryville 8 (Oakland), Calif.

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PHOENIX 4664 N. Central Ave.
SEATTLE (4) 110 Stacy Street

SACRAMENTO 1331 T Street
SAN FRANCISCO (9) 921 Larkin Street

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2250 East Grand Boulevard, Detroit 11, Michigan • • • Cable Address: Fenestra, Detroitmich

Fenestra

RESIDENTIAL STEEL WINDOWS